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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 226

[Docket No. 110726419-2714-01]

RIN 0648-BB30

Endangered and Threatened Species; Designation of Critical Habitat for Lower Columbia River Coho Salmon and Puget Sound Steelhead

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: We, the National Marine Fisheries Service (NMFS), propose to designate critical habitat for lower Columbia River coho salmon (*Oncorhynchus kisutch*) and Puget Sound steelhead (*O. mykiss*), currently listed as threatened species under the Endangered Species Act (ESA). The specific areas proposed for designation for lower Columbia River coho include approximately 2,288 mi (3,681km) of freshwater and estuarine habitat in Oregon and Washington. The specific areas proposed for designation for Puget Sound steelhead include approximately 1,880 mi (3,026 km) of freshwater and estuarine habitat in Puget Sound, Washington. We propose to exclude a number of particular areas from designation because the benefits of exclusion outweigh the benefits of inclusion and exclusion will not result in the extinction of the species.

We are soliciting comments from the public on all aspects of the proposal, including information on the economic, national security, and other relevant impacts of

the proposed designations, as well as the benefits to the species from designations. We will consider additional information received prior to making final designations.

DATES: Comments on this proposed rule must be received by 5 p.m. P.S.T. on [insert date 90 days after date of publication in the FEDERAL REGISTER]. Requests for public hearings must be made in writing by [insert date 45 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: You may submit comments on the proposed rule, identified by FDMS docket number [NOAA-NMFS-2012-0224], by any one of the following methods:

- Electronic Submissions: Submit all electronic public comments via the Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 503–230-5441, Attn: Steve Stone.

- Mail: Chief, Protected Resources Division, Northwest Region, National Marine Fisheries Service, 1201 NE Lloyd Blvd, Suite 1100, Portland, OR 97232.

Instructions: Comments will be posted for public viewing as soon as possible during the comment period. All comments received are a part of the public record and will generally be posted to <http://www.regulations.gov> without change. We may elect not to post comments with obscene or threatening content. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

We will accept anonymous comments (enter N/A in the required fields, if you wish to remain anonymous). You may submit attachments to electronic comments in

Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only. The proposed rule, list of references and supporting documents (including the Draft Biological Report (NMFS 2012a), the Draft Economic Analysis (NMFS 2012b), and the Draft Section 4(b)(2) Report (NMFS 2012c)) are also available electronically at <http://www.nwr.noaa.gov>.

FOR FURTHER INFORMATION CONTACT: Steve Stone, NMFS, Northwest Region, Protected Resources Division, at the address above or at 503-231-2317; or Dwayne Meadows, NMFS, Office of Protected Resources, Silver Spring, MD, 301-427-8403.

#### SUPPLEMENTARY INFORMATION:

##### Background

We are responsible for determining whether species, subspecies, or distinct population segments (DPSs) are threatened or endangered and which areas of their habitat constitute critical habitat for them under the ESA (16 U.S.C. 1531 *et seq.*). To be considered for listing under the ESA, a group of organisms must constitute a “species,” which is defined in section 3 to include “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” The agency has determined that a group of Pacific salmon populations (including lower Columbia River coho) qualifies as a distinct population segment (DPS) if the group is substantially reproductively isolated and represents an important component in the evolutionary legacy of the biological species (56 FR 58612, November 20, 1991). We determined that a group of Pacific steelhead populations qualifies as a DPS if it is markedly separate and significant to its taxon (61 FR 4722, February 7, 1996; 71 FR 834, January 5, 2006). In previous rulemaking we determined

that lower Columbia River coho (70 FR 37160, June 28, 2005) and Puget Sound steelhead (72 FR 26722, May 11, 2007) are each DPSs that warrant protection as threatened species under the ESA. We also determined that critical habitat was not determinable at the time of those final listing decisions and announced that we would propose critical habitat in separate rulemaking. Since the time of listing, the recovery planning process has progressed for these two DPSs and additional new information is now available to better inform the designation process. In view of these developments, we published an advance notice of proposed rulemaking (ANPR) on January 10, 2011 (76 FR 1392), to make the public aware of the opportunity to provide us with comments and information that may be useful in making proposed critical habitat designations for these two DPSs. We received several comments and datasets in response to the ANPR, and these have been reviewed and incorporated as appropriate into documents and analyses supporting this proposed rule (NMFS, 2012a; NMFS, 2012c). We encourage those who submitted comments on the ANPR to review and comment on this proposed rule as well. We will address all relevant comments in the final rule.

We considered various alternatives to the critical habitat designation for these DPSs. The alternative of not designating critical habitat would impose no economic, national security, or other relevant impacts, but would not provide any conservation benefit to the species. This alternative was considered and rejected because such an approach does not meet the legal requirements of the ESA and would not provide for the conservation of these species. The alternative of designating all of the areas considered for designation (i.e., no areas excluded) was also considered and rejected because, for several areas, the benefits of exclusion outweighed the benefits of designation, and we



determined that exclusion of these areas would not significantly impede conservation of the species or result in extinction of the species. The total estimated annualized economic impact associated with the designation of all of the areas considered would be \$357,815 for lower Columbia River coho and \$460,924 for Puget Sound steelhead.

An alternative to designating critical habitat within all of the areas considered for designation is the designation of critical habitat within a subset of these areas. Under section 4(b)(2) of the ESA, we must consider the economic impacts, impacts on national security, and other relevant impacts of designating any particular area as critical habitat. We have the discretion to exclude an area from designation as critical habitat if the benefits of exclusion (i.e., the impacts that would be avoided if an area were excluded from the designation) outweigh the benefits of designation (i.e., the conservation benefits to these species if an area were designated), so long as exclusion of the area will not result in extinction of the species. Exclusion under section 4(b)(2) of the ESA of one or more of the areas considered for designation would reduce the total impacts of designation.

The determination of which units to exclude depends on our ESA section 4(b)(2) analysis, which is conducted for each area and described in detail in the draft ESA 4(b)(2) report (NMFS, 2012c). Under the preferred alternative we propose to exclude Indian lands as well as areas covered by several NMFS-approved habitat conservation plans. We also propose to exclude—due to economic impacts—some or all of the habitat areas in 1 of the 55 watersheds considered for lower Columbia River coho and 4 of the 66 watersheds considered for Puget Sound steelhead. The total estimated economic impact associated with the areas excluded due to economic impacts under this preferred

alternative is \$13,500 for lower Columbia River coho and \$157,100 for Puget Sound steelhead. We determined that the exclusion of these areas would not significantly impede the conservation of either DPS or result in its extinction. We selected this as the preferred alternative because it results in a critical habitat designation that provides for the conservation of both lower Columbia River coho and Puget Sound steelhead while reducing economic and other relevant impacts. This alternative also meets the requirements under the ESA and our joint NMFS-U.S. Fish and Wildlife Service regulations concerning critical habitat.

#### Identifying Proposed Critical Habitat

##### Pacific Salmon and Steelhead Biology and Habitat Use

Pacific salmon and steelhead are anadromous fish, meaning adults migrate from the ocean to spawn in freshwater lakes and streams where their offspring hatch and rear prior to migrating back to the ocean to forage until maturity. The migration and spawning times vary considerably between and within species and populations (Groot and Margolis, 1991). At spawning, adults pair to lay and fertilize thousands of eggs in freshwater gravel nests or “redds” excavated by females. Depending on lake/stream temperatures, eggs incubate for several weeks to months before hatching as “alevins” (a larval life stage dependent on food stored in a yolk sac). Following yolk sac absorption, alevins emerge from the gravel as young juveniles called “fry” and begin actively feeding. Depending on the species and location, juveniles may spend from a few hours to several years in freshwater areas before migrating to the ocean. The physiological and behavioral changes required for the transition to salt water result in a distinct “smolt” stage in most species. On their journey juveniles must migrate downstream through

every riverine and estuarine corridor between their natal (birth) lake or stream and the ocean. En route to the ocean the juveniles may spend from a few days to several weeks in the estuary, depending on the species. The highly productive estuarine environment is an important feeding and acclimation area for juveniles preparing to enter marine waters.

Juveniles and subadults typically spend from one to five years foraging over thousands of miles in the North Pacific Ocean before returning to spawn. Some species, such as coho salmon, have precocious life history types (primarily male fish called “jacks”) that mature and spawn after only several months in the ocean. Spawning migrations known as “runs” occur throughout the year, varying by species and location. Most adult fish return or “home” with great fidelity to spawn in their natal stream, although some do stray to non-natal streams. Salmon species die after spawning, while steelhead may return to the ocean and make repeat spawning migrations.

This complex life cycle gives rise to complex habitat needs, particularly during the freshwater phase (see review by Spence et al., 1996). Spawning gravels must be of a certain size and free of sediment to allow successful incubation of the eggs. Eggs also require cool, clean, and well-oxygenated waters for proper development. Juveniles need abundant food sources, including insects, crustaceans, and other small fishes. They need places to hide from predators (mostly birds and bigger fishes), such as under logs, root wads and boulders in the stream, and beneath overhanging vegetation. They also need places to seek refuge from periodic high flows (side channels and off channel areas) and from warm summer water temperatures (coldwater springs and deep pools). Returning adults generally do not feed in fresh water but instead rely on limited energy stores to migrate, mature, and spawn. Like juveniles, they also require cool water and places to

rest and hide from predators. During all life stages salmon and steelhead require cool water that is free of contaminants. They also require migratory corridors with adequate passage conditions (timing, water quality, and water quantity) to allow access to the various habitats required to complete their life cycle.

The homing fidelity of salmon and steelhead has created a meta-population structure with discrete populations distributed among watersheds (McElhany et al., 2000). Low levels of straying result in regular genetic exchange among populations, creating genetic similarities among populations in adjacent watersheds. Maintenance of the meta-population structure requires a distribution of populations among watersheds where environmental risks (e.g., from landslides or floods) are likely to vary. It also requires migratory connections among the watersheds to allow for periodic genetic exchange and alternate spawning sites in the case that natal streams are inaccessible due to natural events such as a drought or landslide.

More details regarding life history and habitat requirements of lower Columbia River coho and Puget Sound steelhead are found later in this rule under Species Descriptions and Area Assessments, as well as in the final listing rules cited above.

#### Statutory and Regulatory Background for Critical Habitat Designations

The ESA defines critical habitat under section 3(5)(A) as: “(i) the specific areas within the geographical area occupied by the species, at the time it is listed . . . , on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it

is listed . . . upon a determination by the Secretary [of Commerce] that such areas are essential for the conservation of the species.”

Section 4(a) of the ESA precludes military land from designation, where that land is covered by an Integrated Natural Resource Management Plan that the Secretary has found in writing will benefit the listed species.

Section 4(b)(2) of the ESA requires us to designate critical habitat for threatened and endangered species “on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.” This section grants the Secretary of Commerce (Secretary) discretion to exclude any area from critical habitat if he determines “the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat.” In adopting this provision, Congress explained that, “[t]he consideration and weight given to any particular impact is completely within the Secretary’s discretion.” H.R. No.95-1625, at 16-17 (1978). The Secretary’s discretion to exclude is limited, as he may not exclude areas that “will result in the extinction of the species.”

Once critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure they do not fund, authorize, or carry out any actions that will destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure their actions do not jeopardize the continued existence of listed species.

#### Methods and Criteria Used To Identify Critical Habitat

In the following sections, we describe the relevant definitions and requirements in the ESA and our implementing regulations and the key methods and criteria used to prepare this proposed critical habitat designation. Discussion of the specific implementation of each item occurs within the species-specific sections. In accordance with section 4(b)(2) of the ESA and our implementing regulations (50 CFR 424.12), this proposed rule is based on the best scientific information available concerning the species' present and historical range, habitat, and biology, as well as threats to their habitat. In preparing this proposed rule, we reviewed and summarized current information on these species, including recent biological surveys and reports, peer-reviewed literature, NMFS status reviews, and the proposed and final rules to list these species. All of the information gathered to create this proposed rule has been collated and analyzed in three supporting documents: a Draft Biological Report (NMFS, 2012a); a Draft Economic Analysis (NMFS, 2012b); and a Draft Section 4(b)(2) Report (NMFS, 2012c). We used this information to inform the identification of specific areas as critical habitat. We followed a five-step process in order to identify these specific areas: (1) determine the geographical area occupied by the species at the time of listing, (2) identify physical or biological habitat features essential to the conservation of the species, (3) delineate specific areas within the geographical area occupied by the species on which are found the physical or biological features, (4) determine whether the features in a specific area may require special management considerations or protections, and (5) determine whether any unoccupied areas are essential for conservation. Our evaluation and conclusions are described in detail in the following sections.

## Geographical Area Occupied by the Species and Specific Areas within the Geographical Area

Federal, state, and tribal fishery biologists map salmonid species distribution at the level of stream reaches. The mapping includes areas where the species has been observed (within the past 20 years, but typically more recently) or where it is presumed to occur based on the professional judgment of biologists familiar with the watershed and the availability of suitable habitat, in particular the location of known barriers. Much of these data can be accessed and analyzed using geographic information systems (GIS) to produce consistent and fine-scale maps. As a result, nearly all salmonid freshwater and estuarine habitats in Washington, Oregon, Idaho, and California are mapped and available in GIS at a scale of 1:24,000 (e.g., Oregon Department of Fish and Wildlife (ODFW), 2010a; Washington Department of Fish and Wildlife (WDFW), 2010), allowing for accurate and refined delineation of “geographical area occupied by the species” referred to in the ESA definition of critical habitat. We accessed these GIS data beginning in 2010, modified them based on input from state and tribal fishery biologists, and believe that they represent the best available information about areas occupied by each species at the time of listing.

To identify “specific areas,” we used “HUC5” watersheds as we did in our 2005 salmonid critical habitat designations (70 FR 52630, September 2, 2005). HUC5 watershed delineations are created by the U.S. Geological Survey and are generally available from various federal agencies and via the internet (Interior Columbia Basin Ecosystem Management Project, 2003; Regional Ecosystem Office, 2004; U.S. Department of Interior and USGS, 2009). We used this information to organize critical

habitat information systematically and at a scale that was relevant to the spatial distribution of salmon and steelhead. Organizing information at this scale is especially relevant to salmonids, since their innate homing ability allows them to return to particular reaches in the specific watersheds where they were born. Such site fidelity results in spatial aggregations of salmonid populations (and their constituent spawning stocks) that generally correspond to the area encompassed by wider HUC4 subbasins or their constituent HUC5 watersheds (Washington Department of Fisheries, Washington Department of Wildlife and Western Washington Treaty Indian Tribes, 1992; Kostow, 1995; McElhany et al., 2000).

In addition, HUC5 watersheds are consistent with the scale of recovery efforts for West Coast salmon and steelhead, and watershed-level analyses are now common throughout the West Coast. There are presently hundreds of watershed councils or groups in the Pacific Northwest. Many operate at a geographic scale of one to several HUC5 watersheds and are integral parts of larger-scale salmon recovery strategies (Shared Strategy for Puget Sound, 2007; NMFS, 2012d). In addition to these efforts, NMFS has developed various ESA guidance documents that underscore the link between salmon conservation and the recovery of watershed processes (NMFS, 2000; NMFS, 2005; NMFS, 2007). Aggregating stream reaches into HUC5 watersheds allowed the agency to delineate “specific areas” within or outside the geographical area occupied by the species at a scale that corresponds well to salmonid population structure and ecological processes.

As in our 2005 critical habitat designations (70 FR 52630, September 2, 2005), we identified estuary features essential to conservation of these species. For streams and



rivers that empty into marine areas, we included the associated estuary as part of the HUC5 “specific area.” Also, as in our 2005 salmonid designations, we identified certain prey species in nearshore and offshore marine waters (such as Pacific herring) as essential features, and concluded that some may require special management considerations or protection because they are commercially harvested. However, prey species move or drift great distances throughout marine waters, often in association with oceanographic features that also move (such as eddies and thermoclines). Thus, although we sought new information to better inform this question, we continue to conclude that we cannot identify specific offshore marine areas where the essential habitat features may be found (NMFS, 2012e).

We also considered marine areas in Puget Sound for steelhead as potential specific areas, but concluded that at this time the best available information suggests there are no areas that meet the definition of critical habitat in the statute. In our 2005 rule (70 FR 52630, September 2, 2005), we designated critical habitat in nearshore areas for Puget Sound Chinook and Hood Canal summer-run chum salmon. However, steelhead move rapidly out of freshwater and into offshore marine areas, unlike Puget Sound Chinook and Hood Canal summer chum, making it difficult to identify specific foraging areas where the essential features are found. We therefore determined that for Puget Sound steelhead it is not possible to identify specific areas in the nearshore zone in Puget Sound.

Primary Constituent Elements and Physical or Biological Features Essential to the Conservation of the Species

Agency regulations at 50 CFR 424.12(b) interpret the statutory phrase “physical or biological features essential to the conservation of the species.” The regulations state that these features include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species. The regulations further direct us to “focus on the principal biological or physical constituent elements . . . that are essential to the conservation of the species, and specify that these elements shall be the ‘known primary constituent elements’.” The regulations identify primary constituent elements (PCE) as including, but not being limited to: “roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and specific soil types.”

For the 2005 critical habitat designations (70 FR 52630, September 2, 2005), NMFS biologists developed a list of physical and biological features relevant to determining whether occupied stream reaches within a watershed meet the ESA section (3)(5)(A) definition of “critical habitat,” consistent with the implementing regulation at 50 CFR 424.12(b). Relying on the biology and life history of each species, we determined the physical or biological habitat features essential to their conservation. For the present rulemaking, we use the same features, which we identified in the advance notice of proposed rulemaking (76 FR 1392, January 10, 2011). These features include sites essential to support one or more life stages of the DPS (sites for spawning, rearing,

migration and foraging). These sites in turn contain physical or biological features essential to the conservation of the DPS (for example, spawning gravels, water quality and quantity, side channels, forage species). Specific types of sites and the features associated with them (both of which are referred to as PCEs) include the following:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.
2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3. Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and

maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

We re-evaluated these PCEs and determined that they are all fully applicable to lower Columbia River coho and Puget Sound steelhead. The habitat areas proposed for designation in this rule currently contain PCEs within the acceptable range of values required to support the biological processes for which the species use the habitat (NMFS 2012a). The contribution of the PCEs to the habitat varies by site and biological function, illustrating that the quality of the elements may vary within a range of acceptable conditions.

#### Special Management Considerations or Protection

An occupied area cannot be designated as critical habitat unless it contains physical and biological features that “may require special management considerations or protection.” Agency regulations at 50 CFR 424.02(j) define “special management considerations or protection” to mean “any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species.” Many forms of human activity have the potential to affect the habitat of listed salmon species: (1) forestry; (2) grazing; (3) agriculture; (4) road building/maintenance; (5) channel modifications/diking; (6) urbanization; (7) sand and gravel mining; (8) mineral mining; (9) dams; (10) irrigation impoundments and withdrawals; (11) river, estuary, and ocean traffic; (12) wetland loss/removal; (13) beaver removal; (14) exotic/invasive species introductions. In addition to these, human harvest of salmonid

prey species (e.g., herring, anchovy, and sardines) may present another potential habitat-related activity (Pacific Fishery Management Council, 1999). All of these activities have PCE-related impacts via their alteration of one or more of the following: stream hydrology, flow and water-level modifications, fish passage, geomorphology and sediment transport, temperature, dissolved oxygen, vegetation, soils, nutrients and chemicals, physical habitat structure, and stream/estuarine/marine biota and forage (Spence et al., 1996; Pacific Fishery Management Council, 1999).

#### Unoccupied Areas

Section 3(5)(A)(ii) of the ESA authorizes the designation of “specific areas outside the geographical area occupied at the time [the species] is listed” if these areas are essential for the conservation of the species. Regulations at 50 CFR 424.12(e) emphasize that the agency “shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.” We focused our attention on the species’ historical range when considering unoccupied areas since these logically would have been adequate to support the evolution and long-term maintenance of distinct population segments. As with occupied areas, we considered the stream segments within a HUC5 watershed to best describe specific areas. While it is possible to identify which HUC5s represent geographical areas that were historically occupied with a high degree of certainty, this is not always the case with specific stream segments. This is due, in part, to the emphasis on mapping currently occupied habitats and to the paucity of site-specific or systematic historical stream surveys. As described later in this proposed rule, we did identify unoccupied stream reaches that are essential

for conservation of Puget Sound steelhead as well as an unoccupied area that might be essential for conservation of lower Columbia River coho.

#### Military Lands

Section 4(a)(3) of the ESA precludes the Secretary from designating military lands as critical habitat if those lands are subject to an Integrated Natural Resource Management Plan (INRMP) under the Sikes Act that the Secretary certifies in writing benefits the listed species. We consulted with the Department of Defense (DOD) and determined that three installations in Washington with either draft or final INRMPs overlap with streams occupied by Puget Sound steelhead: (1) Naval Base Kitsap; (2) Naval Radio Station, Jim Creek; and (3) Joint Base Lewis-McChord (Army and Air Force). We did not identify any INRMPs or DOD installations within the range of lower Columbia River coho.

We identified habitat meeting the statutory definition of critical habitat at each of the above installations and reviewed the INRMPs, as well as other information available regarding the management of these military lands. Our preliminary review indicates that each of these INRMPs address Puget Sound steelhead habitat, and all contain measures that provide benefits to this DPS (NMFS, 2012c). Examples of the types of benefits include actions that eliminate fish passage barriers, control erosion, protect riparian zones, increase stream habitat complexity, and monitor listed species and their habitats. As a result, we are not proposing to designate critical habitat in areas subject to the INRMPs identified above.

#### Critical Habitat Analytical Review Teams

To assist in the designation of critical habitat, we convened two Critical Habitat Analytical Review Teams (Teams) – one for lower Columbia River coho and another for Puget Sound steelhead. The Teams consisted of NMFS salmonid habitat biologists who were tasked with assessing biological information pertaining to areas under consideration for designation as critical habitat (NMFS, 2012a). The Teams examined each habitat area within the watershed to determine whether the reaches occupied by the species contain the physical or biological features essential to conservation. The Teams also relied on their experience conducting section 7 consultations to determine whether the features “may require special management considerations or protection.”

In addition to occupied areas, the definition of critical habitat includes unoccupied areas if we determine the area is essential for conservation. Accordingly, the Teams were next asked whether there were any unoccupied areas within the historical range of the DPSs that may be essential for conservation. Where information was available to make this determination, the Teams identified any currently unoccupied areas essential for conservation. In some cases, the Teams did not have information available that would allow them to draw that conclusion. The Teams nevertheless identified areas they believe might, in the future, be determined essential through ongoing recovery planning efforts. These are identified under the Species Descriptions and Area Assessments section, and we are specifically requesting information regarding such areas (see Public Comments Solicited below).

The Teams were next asked to determine the relative conservation value of each area for each DPS. The Teams scored each habitat area based on several factors related to the quantity and quality of the physical and biological features (see NMFS, 2012a for

details). They next considered each area in relation to other areas and with respect to the population occupying that area. Based on a consideration of the raw scores for each area, and a consideration of that area's contribution to conservation in relation to other areas and in relation to the overall population structure of the DPS, the Teams rated each habitat area as having a "high," "medium" or "low" conservation value.

The rating of habitat areas as having a high, medium or low conservation value informed the discretionary balancing consideration in ESA section 4(b)(2). The higher the conservation value for an area, the greater may be the likely benefit of the ESA section 7 protections. The Teams also assessed the likelihood of section 7 consultations in a particular watershed (that is, how strong is the "Federal nexus") and how much protection would exist in the absence of a section 7 consultation (that is, how protective are existing management measures and would they likely continue in the absence of section 7 requirements). The Teams determined that all of the watersheds had a high likelihood of receiving a section 7 consultation, but with varying degrees of benefit from designation as critical habitat.

As discussed earlier, the scale chosen for the "specific area" referred to in ESA section 3(5)(a) was a HUC5 watershed. There were some complications with the way some watersheds were delineated that required us to adapt the approach for some areas. In particular, a large stream or river might serve as a rearing and migration corridor to and from many watersheds, yet be embedded itself in a watershed. In any given watershed through which it passes, the stream may have a few or several tributaries. For rearing/migration corridors embedded in a watershed, the Teams were asked to rate the conservation value of the watershed based on the tributary habitat. We assigned the



rearing/migration corridor the rating of the highest-rated watershed for which it served as a rearing/migration corridor. The reason for this treatment of migration corridors is the role they play in the salmon's life cycle. Salmon are anadromous – born in fresh water, migrating to salt water to feed and grow, and returning to fresh water to spawn. Without a rearing/migration corridor to and from the sea, salmon cannot complete their life cycle. It would be illogical to consider a spawning and rearing area as having a particular conservation value and not consider the associated rearing/migration corridor as having a similar conservation value.

#### Species Descriptions and Area Assessments

This section describes the lower Columbia River coho and Puget Sound steelhead DPSs, noting specific life-history traits and associated habitat requirements, and summarizes the Teams' assessment of habitat areas for each DPS. The Teams' assessments addressed PCEs in the habitat areas within watersheds as well as a separate Columbia River rearing/migration corridor for lower Columbia River coho. For ease of reporting and reference these watersheds have been organized into their larger, associated subbasin.

#### Lower Columbia River Coho Salmon Life History and Conservation Status

The lower Columbia River coho DPS includes all naturally spawned populations of coho in the Columbia River and its tributaries in Washington and Oregon, from the mouth of the Columbia River upstream to and including the Big White Salmon and Hood Rivers, and including the lower Willamette River up to Willamette Falls, Oregon, as well as coho from twenty-five artificial propagation programs located in numerous watersheds throughout the range of the DPS (70 FR 37160, June 28, 2005).

Coho populations in this DPS display one of two major life history types based on when and where adults migrate from the Pacific Ocean to spawn in fresh water. Early returning coho (Type S) typically forage in marine waters south of the Columbia River and return beginning in mid-August, while late returning coho (Type N) generally forage to the north and return to the Columbia River from late September through December (ODFW, 2010b). It is thought that early returning coho migrate to headwater areas and late returning fish migrate to the lower reaches of larger rivers or into smaller streams and creeks along the Columbia River. Although there is some level of reproductive isolation and ecological specialization between early and late types, there is some uncertainty regarding the importance of these differences (Myers et al., 2006). Some tributaries historically supported spawning by both life history types.

Mature coho of both types typically enter fresh water to spawn from late summer to late autumn. Spawning typically occurs between November and January. Migration and spawning timing of specific local populations may be affected by factors such as latitude, migration distance, flows, water temperature, maturity, or migration obstacles. Coho generally occupy intermediate positions in tributaries, typically further upstream than chum salmon or fall-run Chinook salmon, but often downstream of steelhead or spring-run Chinook salmon (ODFW, 2010b). Typical coho spawning habitat includes pea to orange-size spawning gravel in small, relatively low-gradient tributaries (ODFW, 2010b). Egg incubation can take from 45 to 140 days, depending on water temperature, with longer incubation in colder water. Fry may thus emerge from early spring to early summer. Juveniles prefer complex instream structure (primarily large and small woody debris) and shaded streams with tree-lined banks for rearing; they often overwinter in off-

channel alcoves and beaver ponds (where available) (ODFW, 2010a). Freshwater rearing lasts until the following spring when the juveniles undergo physiological changes (smoltification) and migrate to salt water. Juvenile coho are present in the Columbia River estuary from March to August (Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, 2010). Coho grow relatively quickly in the ocean, reaching up to six kilograms after about 16 months of ocean rearing. Most coho are sexually mature at age three, except for a small percentage of males (jacks) who return to natal waters after only a few months of ocean residency. All coho die after spawning.

There are 24 historical populations of lower Columbia River coho identified in three ecological zones or “strata” within the range of this DPS: Coast, Cascade, and Gorge strata (Myers et al., 2006). McElhany et al. (2007) assessed the viability of lower Columbia River coho populations and determined that only one—the Clackamas River—is approaching viability. They also observed that, with the exception of the Clackamas and Sandy populations, it is likely that most of the wild lower Columbia River coho populations were effectively extirpated in the 1990s and that no viable populations appear to exist in either the Coast or Gorge stratum. Although recently there is evidence of some natural production in this DPS, the majority of populations remain dominated by hatchery origin spawners, and there is little data to indicate they would naturally persist in the long term (NMFS, 2003). Approximately 40 percent of historical habitat is currently inaccessible, which restricts the number of areas that might support natural production, and further increases the DPS’s vulnerability to environmental variability and catastrophic events (NMFS, 2003). The extreme loss of naturally spawning populations, the low abundance of extant populations, diminished diversity, and fragmentation and

isolation of the remaining naturally produced fish confer considerable risks to lower Columbia River coho.

Major habitat factors limiting recovery in fresh water include floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream substrate, stream flow, and water quality (Pacific Coast Salmon Restoration Funds, 2007). In addition to impacts of the Federal Columbia River Hydropower System (especially Bonneville Dam on the mainstem Columbia River), numerous other populations are affected by upstream and tributary dams in the White Salmon, Hood, Lewis, Cowlitz, Sandy, and Clackamas basins, although many of those effects are being addressed as a result of recent Federal Energy Regulatory Commission re-licensing and associated ESA section 7 consultations. For example, the removal of Marmot and Little Sandy dams in the Sandy River basin has improved passage for the coho population into the upper watershed, and the removal of Condit Dam in 2011 is expected to support restoration of the White Salmon River portion of the Washington Upper Gorge coho population.

The ocean survival of juvenile lower Columbia River coho can be affected by estuary factors such as changes in food availability and the presence of contaminants. Characteristics of the Columbia River plume are also thought to be significant to lower Columbia River coho migrants during transition to the ocean phase of their lifecycle, because yearling migrants appear to use the plume as habitat, in contrast to other species whose sub-yearling juveniles stay closer to shore (Fresh *et al.*, 2005). Predation and growth during the first marine summer appear to be important components determining coho brood-year strength (Beamish *et al.*, 2001).

Recovery planning for coho and other ESA-listed salmon and steelhead in the lower Columbia River is underway, and a proposed recovery plan was made available for public comment in May 2012 (77 FR 28855, 16 May 2012). The proposed recovery plan includes three “management unit” plans, or plans addressing geographic areas smaller than the entire range of the DPS: (1) a Washington Lower Columbia management unit plan overseen and coordinated by the Lower Columbia Fish Recovery Board (LCFRB); (2) a White Salmon management unit plan overseen by NMFS and addressing the White Salmon River basin in Washington; and (3) an Oregon Lower Columbia management unit plan led by the ODFW with participation by the Oregon Governor’s Natural Resources Office, NMFS, and the Oregon Lower Columbia River Stakeholder Team. Two other documents – an estuary module and a hydropower module – are key components of this recovery plan. These documents, which address regional-scale issues affecting lower Columbia River salmon and steelhead and other listed Columbia River DPSs, provide a consistent set of assumptions and recovery actions that were incorporated into each management unit plan. The plans also are all consistent with work by the Willamette/Lower Columbia Technical\Recovery Team, which was formed by NMFS to assess the population structure and develop viability criteria for listed lower Columbia River salmon and steelhead (see McElhany et al., 2003; McElhany et al., 2006; Myers et al., 2006; and McElhany et al., 2007). Because the ESA requires that recovery plans address the entire listed entity/DPS, NMFS synthesized these management unit plans and modules into a single recovery plan that also underscores interdependencies and issues of regional scope, and ensures that the entire salmon life cycle is addressed.

Critical habitat is currently designated for three DPSs of salmon and steelhead that use lower Columbia tributary watersheds for spawning and rearing: lower Columbia River Chinook salmon, lower Columbia River steelhead, and Columbia River chum salmon (70 FR 52630, September 2, 2005). Critical habitat is also designated in the lower Columbia River and several tributaries for bull trout (75 FR 63898, October 18, 2010) and the Southern DPS of Pacific eulachon (76 FR 65324, October 20, 2011). In addition, green sturgeon (74 FR 52300, October 9, 2009) and several listed salmonid DPSs that spawn in watersheds upstream of the range of lower Columbia River coho (e.g., Snake River fall Chinook salmon) have rearing and migration areas designated as critical habitat in areas occupied by coho in the lower Columbia River and estuary (58 FR 68543, December 28, 1993; 64 FR 57399, October 25, 1999; 70 FR 52630, September 2, 2005). These existing designations have extensive overlap with areas under consideration as critical habitat for lower Columbia River coho, and given the shared general life history characteristics of all these anadromous salmonids, the essential habitat features will likewise be similar to those for existing salmon and steelhead designations.

The lower Columbia River Team's assessment for this DPS addressed 10 subbasins containing 55 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Each of these 56 areas constituted the specific areas for the analysis of critical habitat for this species. The Team evaluated the conservation value of habitat areas on the basis of the habitat requirements of lower Columbia River coho, consistent with the PCEs described in the "Primary Constituent Elements and Physical or Biological Features Essential to the Conservation of the Species" section above. The Team also considered the conservation value of each specific area in the context of the

populations within the strata identified by a separate Technical Recovery Team (TRT) convened to address biological issues relating to the recovery of this DPS (Myers et al., 2006). Summarized information is presented below by USGS subbasin because the subbasin presents a convenient and systematic way to organize the Team's watershed assessments for this DPS and their names are generally more recognizable because they typically identify major river systems. Full details are in the biological report supporting this proposed designation (NMFS, 2012a).

Middle Columbia/Hood Subbasin—This subbasin contains 13 watersheds, 8 of which are occupied by this DPS. Occupied watersheds encompass approximately 1,370 mi<sup>2</sup> (3,548 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 212 miles (341 km) of occupied riverine habitat in the watersheds, including a 23-mile (37-km) segment of the Columbia River (ODFW, 2010a; WDFW, 2010). Myers et al. (2006) identified a single ecological zone (Columbia Gorge) containing three populations: Upper Gorge Tributaries, Big White Salmon River, and Hood River. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, and urbanization (NMFS, 2012a). The Team also determined that the occupied watersheds in this subbasin were of either high or medium conservation value to the DPS. Of the eight watersheds reviewed, five were rated as having high conservation value and three were rated as having medium conservation value to the DPS. The Team noted that two watersheds (Middle Columbia/Eagle Creek and Middle Columbia/Grays Creek) contain a high value rearing and migration corridor in the Columbia River connecting high value

upstream watersheds with downstream reaches and the ocean. The Team also considered whether blocked historical habitat above Condit Dam (on the White Salmon River) may be essential for conservation of the DPS. The decommissioning of this 100-year-old dam occurred in the summer of 2011 and will allow coho and other salmonids access to at least 26 miles (42 km) of habitat in the basin upstream (PacifiCorp, 2012a; PacifiCorp, 2012b). The Team determined that accessing this habitat would likely provide a benefit to the DPS. However, the Team concluded that it was unclear whether the areas above Condit Dam are essential for conservation of the entire DPS, especially in comparison to other, more extensive, historical habitats where coho are actively being reintroduced and that may be of greater potential benefit to the DPS (e.g., areas in the Upper Lewis River). We seek comments and information specific to this unoccupied area and whether it is essential to the conservation of lower Columbia River coho.

Lower Columbia/Sandy Subbasin—This subbasin contains nine watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 1,076 mi<sup>2</sup> (2,787 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 453 miles (729 km) of occupied riverine habitat in the watersheds, including a 26-mile (42-km) segment of the Columbia River (ODFW, 2010a; WDFW, 2010). Myers *et al.* (2003) identified two ecological zones associated with this subbasin (Western Cascade Range and Columbia Gorge) containing four populations (Lower Gorge tributaries, Sandy River, Washougal River, and Salmon Creek). The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road



building/maintenance, and urbanization (NMFS, 2012a). The Team also determined that the occupied watersheds in this subbasin were of high or medium conservation value to the DPS. Of the nine watersheds reviewed, four were rated as having high conservation value and five were rated as having medium conservation value to the DPS. The Team also noted that one watershed (Columbia Gorge Tributaries) contains a high value rearing and migration corridor in the Columbia River connecting high value upstream watersheds with downstream reaches and the ocean.

Lewis Subbasin—This subbasin contains six watersheds, all of which are currently occupied by this DPS (including four watersheds above Merwin Dam now accessible to coho via trap and haul operations in the Upper Lewis River (PacifiCorp et al., 2004). Occupied watersheds encompass approximately 456 mi<sup>2</sup> (1,181 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 299 miles (481 km) of occupied riverine habitat in the watersheds (WDFW, 2010). Myers et al. (2003) identified one ecological zone associated with this subbasin (Western Cascade Range) containing two populations – one in the East Fork Lewis River and the other in the North Fork Lewis River. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, and urbanization (NMFS, 2012a). The Team also determined that the occupied watersheds in this subbasin ranged from high to low conservation value to the DPS. Of the six watersheds reviewed, three were rated as having high conservation value, two were rated as having medium conservation value, and one was rated as having low conservation value to the DPS.

Lower Columbia/Clatskanie Subbasin—This subbasin contains six watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 841 mi<sup>2</sup> (2,178 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 387 miles (623 km) of occupied riverine habitat in the watersheds (ODFW, 2010a; WDFW, 2010). Myers *et al.* (2003) identified two ecological zones (Coast Range and Western Cascade Range) containing four populations (Kalama River, Clatskanie River, Elochoman Creek, and Scappoose Creek) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). The Team also determined that the occupied watersheds in this subbasin were of high or medium conservation value to the DPS. Of the six watersheds reviewed, three were rated as having high conservation value and three were rated as having medium conservation value to the DPS.

Upper Cowlitz Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 1,030 mi<sup>2</sup> (2,668 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 181 miles (291 km) of occupied riverine habitat in the watersheds (WDFW, 2010). This entire habitat is located upstream of impassable dams (Mayfield and Mossyrock dams) and only accessible to anadromous fish via trap and haul operations. Myers *et al.* (2003) identified one ecological zone (Western Cascade Range) containing two populations (Upper Cowlitz River and Cispus River) in this subbasin. The Team concluded that all occupied

areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, road building/maintenance, and urbanization (NMFS, 2012a). The Team also determined that four of the occupied HUC5 watersheds in this subbasin were of high conservation value and one was of medium conservation value to the DPS.

Lower Cowlitz Subbasin—This subbasin contains eight watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 1,460 mi<sup>2</sup> (3,781 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 791 miles (1,273 km) of occupied riverine habitat in the watersheds (WDFW, 2010). Habitat in two watersheds – Tilton River and Riffe Reservoir – is located upstream of impassable dams (Mayfield Dam and Mossyrock Dam) and only accessible to anadromous fish via trap and haul operations. Myers *et al.* (2003) identified one ecological zone (Western Cascade Range) containing six populations (Upper Cowlitz River, Lower Cowlitz River, Tilton River, Coweeman River, North Fork Toutle River, and South Fork Toutle River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). The Team also determined that the occupied watersheds in this subbasin ranged from high to low conservation value to the DPS. Of the eight watersheds reviewed, six were rated as having high conservation value, one was rated as

having medium conservation value, and one was rated as having low conservation value to the DPS.

Lower Columbia Subbasin— This subbasin contains three watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 515 mi<sup>2</sup> (1,334 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 370 miles (595 km) of occupied riverine habitat in the watersheds (ODFW, 2010a; WDFW, 2010). Myers et al. (2003) identified one ecological zone (Coast Range) containing three populations (Grays/Chinook Rivers, Big Creek, and Youngs Bay) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). Of the three watersheds reviewed, one was rated as having high conservation value and two were rated as having medium conservation value to the DPS.

Middle Willamette Subbasin— The occupied portion of this subbasin is downstream of Willamette Falls and includes a single watershed (Abernethy Creek) as well as a short segment (approximately 1 mile (1.6 km)) of the Willamette River downstream of Willamette Falls. The Abernethy Creek watershed encompasses approximately 134 mi<sup>2</sup> (347 km<sup>2</sup>). Fish distribution and habitat use data from ODFW identify approximately 27 miles (43 km) of occupied riverine habitat in the subbasin (ODFW, 2010a). Myers et al. (2003) identified one ecological zone (Western Cascade Range) containing one population (Clackamas River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several

management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). The Team also determined that the single occupied watershed in this subbasin was of low conservation value to the DPS.

Clackamas Subbasin— This subbasin contains six watersheds, two of which are occupied by this DPS. Occupied watersheds encompass approximately 270 mi<sup>2</sup> (699 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 253 miles (407 km) of occupied riverine habitat in the watersheds (ODFW, 2010a). Myers *et al.* (2003) identified one ecological zone (Western Cascade Range) containing one population (Clackamas River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). The Team also determined that all of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Lower Willamette Subbasin— This subbasin contains three watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 407 mi<sup>2</sup> (1,054 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 163 miles (262 km) of occupied riverine habitat in the watersheds (ODFW, 2010b). Myers *et al.* (2003) identified two ecological zones (Coast Range and Western Cascade Range) containing two populations (Clackamas River and Scappoose Creek) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this

DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, road building/maintenance, urbanization, and wetlands loss/removal (NMFS, 2012a). Of the three watersheds reviewed, two were rated as having high conservation value and one was rated as having medium conservation value to the DPS.

Lower Columbia River Corridor—The lower Columbia River rearing and migration corridor consists of that segment of the Columbia River from the confluences of the Sandy River (Oregon) and Washougal River (Washington) to the Pacific Ocean. Fish distribution and habitat use data from ODFW and WDFW identify approximately 118 miles (190 km) of occupied riverine and estuarine habitat in this corridor (ODFW 2010a, WDFW 2010). After reviewing the best available scientific data for all of the areas within the freshwater and estuarine range of this DPS, the Team concluded that the lower Columbia River corridor was of high conservation value to the DPS. Other upstream reaches of the Columbia River corridor (within the Middle Columbia/Hood and Lower Columbia/Sandy subbasins above) are also high value for rearing/migration. The Team noted that the lower Columbia River corridor connects every watershed and population in this DPS with the ocean and is used by rearing/migrating juveniles and migrating adults. The Columbia River estuary is a particularly important area for this DPS as both juveniles and adult salmon make the critical physiological transition between life in freshwater and marine habitats (Interdisciplinary Scientific Advisory Board, 2000; Marriott et al., 2002).

Unoccupied Areas— The Team also considered whether any blocked historical habitats may be essential for conservation of the DPS. As noted above in the Middle

Columbia/Hood Subbasin, efforts are underway to allow salmon to access areas in the upper White Salmon River above Condit Dam. Access to these historical habitats will likely benefit lower Columbia River coho. However, the Team concluded that it was unclear whether the areas above Condit Dam are essential for conservation of the entire DPS, especially in comparison to other, more extensive, historical habitats where coho are actively being reintroduced and that may be of greater potential benefit to the DPS (e.g., areas in the Upper Lewis River). We solicit information and public comment on the importance of these areas to coho salmon and whether our final designation should include these areas as designated critical habitat.

#### Puget Sound Steelhead Life History and Conservation Status

Steelhead populations can be divided into two basic reproductive ecotypes, based on the state of sexual maturity at the time of river entry (summer or winter) and duration of spawning migration (Burgner et al., 1992). The Puget Sound DPS includes all naturally spawned anadromous winter-run and summer-run steelhead populations in streams in the river basins of the Strait of Juan de Fuca, Puget Sound, and Hood Canal, Washington, bounded to the west by the Elwha River (inclusive) and to the north by the Nooksack River and Dakota Creek (inclusive), as well as the Green River natural and Hamma Hamma winter-run steelhead hatchery stocks. Non-anadromous “resident” O. mykiss occur within the range of Puget Sound steelhead, but are not part of the DPS due to marked differences in physical, physiological, ecological, and behavioral characteristics (71 FR 15666, March 29, 2006).

Stream-maturing steelhead, also called summer-run steelhead, enter fresh water at an early stage of maturation, usually from May to October. These summer-run fish

migrate to headwater areas and hold for several months before spawning in the spring. Ocean-maturing steelhead, also called winter-run steelhead, enter fresh water from December to April at an advanced stage of maturation and spawn from March through June (Hard et al., 2007). While there is some temporal overlap in spawn timing between these forms, in basins where both winter- and summer-run steelhead are present, summer-run steelhead spawn farther upstream, often above a partially impassable barrier. In many cases it appears that the summer migration timing evolved to access areas above falls or cascades that present velocity barriers to migration during high winter flow months, but are passable during low summer flows. Winter-run steelhead are predominant in Puget Sound, in part because there are relatively few basins in the Puget Sound DPS with the geomorphological and hydrological characteristics necessary to establish the summer-run life history. Summer-run steelhead stocks within this DPS are all small and occupy limited habitat.

Steelhead eggs incubate from one to four months (depending on water temperature) before hatching, generally between February and June. After emerging from the gravel, fry commonly occupy the margins of streams and side channels, seeking cover to make them less vulnerable to predation (WDFW, 2008). Juvenile steelhead forage for one to four years before emigrating to sea as smolts. Smoltification and seaward migration occur principally from April to mid-May. The nearshore migration pattern of Puget Sound steelhead is not well understood, but it is generally thought that smolts move quickly offshore, bypassing the extended estuary transition stage which many other salmonids need (Hartt and Dell, 1986).



Steelhead oceanic migration patterns are also poorly understood. Evidence from tagging and genetic studies indicates that Puget Sound steelhead travel to the central North Pacific Ocean (French et al., 1975; Hartt and Dell, 1986; Burgner et al., 1992). Puget Sound steelhead feed in the ocean for one to three years before returning to their natal stream to spawn. They typically spend two years in the ocean, although, notably, Deer Creek summer-run steelhead spend only a single year in the ocean before spawning. In contrast with other species of Pacific salmonids, steelhead are iteroparous, capable of repeat spawning. While winter steelhead spawn shortly after returning to fresh water, adult summer steelhead rely on “holding habitat” – typically cool, deep pools – for up to 10 months prior to spawning (WDFW, 2008). Adults tend to spawn in moderate to high-gradient sections of streams. In contrast to semelparous Pacific salmon, steelhead females do not guard their redds, or nests, but return to the ocean following spawning (Burgner et al., 1992). Spawned-out fish that return to the sea are referred to as “kelts.”

The Puget Sound steelhead DPS includes more than 50 stocks of summer- and winter-run fish (WDFW, 2002). Hatchery steelhead production in Puget Sound is widespread and focused primarily on the propagation of winter-run fish derived from a stock of domesticated, mixed-origin steelhead (the Chambers Creek Hatchery stock) originally native to a small Puget Sound stream that is now extirpated from the wild. Hatchery summer-run steelhead are also produced in Puget Sound; these fish are derived from the Skamania River in the Columbia River Basin.

Habitat utilization by steelhead in the Puget Sound area has been dramatically affected by large dams and other manmade barriers in a number of drainages, including the Nooksack, Skagit, White, Nisqually, Skokomish, and Elwha river basins. In addition

to limiting habitat accessibility, dams affect habitat quality through changes in river hydrology, altered temperature profile, reduced downstream gravel recruitment, and the reduced recruitment of large woody debris. Such changes can have significant negative impacts on salmonids (e.g., increased water temperatures resulting in decreased disease resistance) (Spence et al., 1996; McCullough, 1999).

Many upper tributaries in the Puget Sound region have been affected by poor forestry practices, while many of the lower reaches of rivers and their tributaries have been altered by agriculture and urban development. Urbanization has caused direct loss of riparian vegetation and soils, significantly altered hydrologic and erosional rates and processes (e.g., by creating impermeable surfaces such as roads, buildings, parking lots, sidewalks etc.), and polluted waterways with stormwater and point-source discharges. The loss of wetland and riparian habitat has dramatically changed the hydrology of many streams, with increases in flood frequency and peak low during storm events and decreases in groundwater driven summer flows (Moscrip and Montgomery, 1997; Booth et al., 2002; May et al., 2003). River braiding and sinuosity have been reduced through the construction of dikes, hardening of banks with riprap, and channelization of the mainstem. Constriction of river flows, particularly during high flow events, increases the likelihood of gravel scour and the dislocation of rearing juveniles. The loss of side-channel habitats has also reduced important areas for spawning, juvenile rearing, and overwintering habitats. Estuarine areas have been dredged and filled, resulting in the loss of important juvenile rearing areas. In addition to being a factor that contributed to the present decline of Puget Sound steelhead populations, the continued destruction and modification of steelhead habitat is the principal factor limiting the viability of the Puget

Sound steelhead DPS into the foreseeable future. Because of their limited distribution in upper tributaries, summer-run steelhead may be at higher risk than winter-run steelhead from habitat degradation in larger, more complex watersheds.

Recovery planning in Puget Sound is proceeding as a collaborative effort between NMFS and numerous tribal, state, and local governments and interested stakeholders. The Puget Sound Partnership is the entity responsible for working with NMFS to recover the listed Puget Sound Chinook salmon DPS. The Hood Canal Coordinating Council is the regional board implementing the recovery plan for the Hood Canal summer chum salmon DPS. There is a good deal of overlap between the geographical area occupied by Puget Sound steelhead and these two salmon DPSs, both of which had critical habitat designated on September 2, 2005 (70 FR 52630). A Technical Recovery Team was convened in 2008 to identify the historically independent spawning populations of steelhead within, and viability criteria for, the Puget Sound steelhead DPS. In 2011 the TRT completed an initial draft assessment (Puget Sound Steelhead Technical Recovery Team, 2011) and has begun work on viability criteria for this DPS. Upon completion of the technical work from the TRT, we will develop a recovery plan for Puget Sound steelhead and will work directly with the two regional boards to augment implementation plans to include measures to recover Puget Sound steelhead. During the critical habitat designation process for Puget Sound steelhead we will continue to review and incorporate as appropriate the information from these regional recovery plans as well as the ongoing population work by the TRT.

Critical habitat is currently designated for other salmonid DPSs that inhabit Puget Sound watersheds, including Puget Sound Chinook salmon and Hood Canal summer-run

chum salmon (70 FR 52630, September 2, 2005) as well as bull trout (75 FR 63898, October 18, 2010). These existing designations have extensive overlap with areas under consideration as critical habitat for Puget Sound steelhead. In the case of ESA-listed Chinook and chum salmon, the PCEs we identified are the same as those proposed for Puget Sound steelhead (NMFS, 2012a). However, watershed conservation values for steelhead may differ due to species-specific differences in population structure and habitat utilization.

The Puget Sound Team's assessment for this DPS addressed 18 subbasins containing 66 occupied watersheds. Each of these 66 areas constituted the specific areas for the analysis of critical habitat for this species. The Team evaluated the conservation value of habitat areas on the basis of the physical and biological habitat requirements of Puget Sound steelhead, consistent with the PCEs described in the "Primary Constituent Elements and Physical or Biological Features Essential to the Conservation of the Species" section above. The Team also considered the conservation value of each watershed in the context of the demographically independent populations within the three ecological zones/major population groups (MPGs) (Northern Cascades, Central and South Puget Sound, and Olympic Peninsula) in Puget Sound identified by the Puget Sound TRT (2011). Summarized information is again presented below by USGS subbasin because they present a convenient and systematic way to organize the Team's watershed assessments for this DPS and their names are generally more recognizable because they typically identify major river systems. Full details are in the biological report supporting this proposed designation (NMFS, 2012a).

Strait of Georgia Subbasin—This subbasin contains three watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 428 mi<sup>2</sup> (1,109 km<sup>2</sup>). Fish distribution and habitat use data from WDFW (2010) and the Northwest Indian Fisheries Commission (NWIFC) (2011) identify approximately 118 miles (190 km) of occupied riverine habitat in the watersheds. Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing two winter-run populations (Drayton Harbor Tributaries and Samish River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, forestry, and urbanization (NMFS, 2012a). The Team also determined that all of the occupied watersheds in this subbasin were of medium conservation value to the DPS.

Nooksack Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 795 mi<sup>2</sup> (2,059 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 324 miles (521 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing one winter-run population (Nooksack River) and one summer-run population (South Fork Nooksack River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, irrigation impoundments and withdrawals, and road

building/maintenance (NMFS, 2012a). Of the five watersheds reviewed, three were rated as having high conservation value and two were rated as having medium conservation value to the DPS.

Upper Skagit Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 999 mi<sup>2</sup> (2,587 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 167 miles (269 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing two winter-run populations (Baker River and Skagit River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including, dams, forestry, and road building/maintenance (NMFS, 2012a). Of the five watersheds reviewed, four were rated as having high conservation value and one was rated as having medium conservation value to the DPS.

Sauk Subbasin—This subbasin contains four watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 741 mi<sup>2</sup> (1,919 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 156 miles (251 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing one winter-run population (Sauk River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and management activities that may affect the PCEs, including forestry and road

building/maintenance (NMFS, 2012a). Of the four watersheds reviewed, three were rated as having high conservation value and one was rated as having medium conservation value to the DPS.

Lower Skagit Subbasin—This subbasin contains two watersheds, both of which are occupied by this DPS. Occupied watersheds encompass approximately 447 mi<sup>2</sup> (1,158 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 210 miles (338 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing four winter-run populations (Baker River, Nookachamps Creek, Sauk River, and Skagit River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including, agriculture, channel modifications/diking, forestry, wetland loss/removal, and urbanization (NMFS, 2012a). The Team also determined that both of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Stillaguamish Subbasin—This subbasin contains three watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 704 mi<sup>2</sup> (1,823 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 351 miles (465 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing two summer-run populations (Deer Creek and Canyon Creek) and one winter-run population (Stillaguamish River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration

PCEs for this DPS and identified several management activities that may affect the PCEs, including, forestry, wetland loss/removal, and urbanization (NMFS, 2012a). The Team also determined that all of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Skykomish Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 853 mi<sup>2</sup> (2,209 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 230 miles (370 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing one summer-run population (North Fork Skykomish River) and one winter-run population (Snohomish/Skykomish River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including, agriculture, dams, forestry, road building/maintenance, and urbanization (NMFS 2012a). Of the five watersheds reviewed, three were rated as having high conservation value and two were rated as having medium conservation value to the DPS.

Snoqualmie Subbasin—This subbasin contains two watersheds, both of which are occupied by this DPS. Occupied watersheds encompass approximately 504 mi<sup>2</sup> (1,305 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 199 miles (320 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing one summer-run population (Tolt River) and one winter-run population (Snoqualmie River) in this subbasin. The Team concluded



that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture and forestry (NMFS, 2012a). The Team also determined that both of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Snohomish Subbasin—This subbasin contains two watersheds, both of which are occupied by this DPS. Occupied watersheds encompass approximately 278 mi<sup>2</sup> (720 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 215 miles (557 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Northern Cascades) containing two summer-run populations (North Fork Skykomish River and Tolt River) and three winter-run populations (Pilchuck River, Snohomish/Skykomish River, and Snoqualmie River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, dams, forestry, urbanization, and sand/gravel mining (NMFS, 2012a). The Team also determined that both of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Lake Washington Subbasin—This subbasin contains four watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 619 mi<sup>2</sup> (1,603 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 202 miles (325 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Central and South Puget Sound) containing two winter-run populations

(Cedar River and Lake Washington Tributaries) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including, channel modifications/diking, dams, road building/maintenance, forestry, and urbanization (NMFS, 2012a). Of the four watersheds reviewed, one was rated as having medium conservation value and three were rated as having low conservation value to the DPS.

Duwamish Subbasin—This subbasin contains three watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 487 mi<sup>2</sup> (1,261 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 178 miles (286 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Central and South Puget Sound) containing one winter-run population (Green River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, dams, irrigation impoundments/withdrawals, and urbanization (NMFS, 2012a). The Team also determined that all of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Puyallup Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 996 mi<sup>2</sup> (2,580 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 272 miles (438 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Central and

South Puget Sound) containing two winter-run populations (Puyallup River/Carbon River and White River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, dams, irrigation impoundments/withdrawals, and urbanization (NMFS, 2012a). The Team also determined that all of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Nisqually Subbasin—This subbasin contains two watersheds, both of which are occupied by this DPS. Occupied watersheds encompass approximately 472 mi<sup>2</sup> (1,222 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 161 miles (259 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Central and South Puget Sound) containing one winter-run population (Nisqually River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, dams, and urbanization (NMFS, 2012a). The Team also determined that both of the occupied watersheds in this subbasin were of high conservation value to the DPS.

Deschutes Subbasin—This subbasin contains two watersheds, both of which are occupied by this DPS. Occupied watersheds encompass approximately 168 mi<sup>2</sup> (435 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 63 miles (101 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Central and

South Puget Sound) in this subbasin. The Puget Sound TRT did not identify a demographically independent population of steelhead in this subbasin and noted that the Deschutes River was historically impassable to anadromous fish at Tumwater Falls. Winter steelhead were introduced into the Deschutes River when a fish ladder was installed at Tumwater Falls in 1954, but it is unclear if a naturally self-sustaining population exists (WDFW, 2008). Despite these uncertainties, the Team noted that steelhead spawning in this watershed would likely be considered part of the listed DPS. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, forestry, and grazing (NMFS, 2012a). The Team also determined that both of the occupied watersheds in this subbasin were of low conservation value to the DPS.

Skokomish Subbasin—This subbasin consists of one watershed occupied by this DPS, encompassing approximately 248 mi<sup>2</sup> (642 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 86 miles (138 km) of occupied riverine habitat in the watershed (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Olympic Peninsula) containing one winter-run population (Skokomish River) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including channel modifications/diking, dams, forestry, and urbanization (NMFS, 2012a). The Team also determined that the single occupied watershed in this subbasin was of high conservation value to the DPS.

Hood Canal Subbasin—This subbasin contains seven watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 605 mi<sup>2</sup> (1,567 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 153 miles (246 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Olympic Peninsula) containing three winter-run populations (East, West, and South Hood Canal Tributaries) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, road building/maintenance, and urbanization (NMFS, 2012a). Of the seven watersheds reviewed, four were rated as having high conservation value and three were rated as having medium conservation value to the DPS.

Kitsap Subbasin—This subbasin contains six watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 1,087 mi<sup>2</sup> (2,815 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 260 miles (418 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011). Preliminary analyses by the Puget Sound TRT (2011) have identified two ecological zones/MPGs (Olympic Peninsula and South Central Cascades) containing three winter-run populations (Strait of Juan de Fuca Lowland Tributaries, East Kitsap Peninsula Tributaries, and South Sound Tributaries) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, forestry, grazing, and urbanization (NMFS, 2012a). Of the six watersheds reviewed, four

were rated as having low conservation value and two were rated as having medium conservation value to the DPS.

Dungeness/Elwha Subbasin—This subbasin contains five watersheds, all of which are occupied by this DPS. Occupied watersheds encompass approximately 828 mi<sup>2</sup> (2,145 km<sup>2</sup>). Fish distribution and habitat use data identify approximately 144 miles (232 km) of occupied riverine habitat in the watersheds (WDFW, 2010; NWIFC, 2011).

Preliminary analyses by the Puget Sound TRT (2011) have identified one ecological zone/MPG (Olympic Peninsula) containing four winter-run populations (Dungeness River, Elwha River, Strait of Juan de Fuca Lowland Tributaries, and Strait of Juan de Fuca Independent Tributaries) in this subbasin. The Team concluded that all occupied areas contain spawning, rearing, or migration PCEs for this DPS and identified several management activities that may affect the PCEs, including agriculture, channel modifications/diking, dams, forestry, irrigation impoundments/withdrawals, road building/maintenance, and urbanization (NMFS, 2012a). Of the five watersheds reviewed, four were rated as having high conservation value and one was rated as having medium conservation value to the DPS.

Unoccupied Areas—The Team also considered whether blocked historical habitat above Elwha Dam and Glines Canyon Dam (on the Elwha River) may be essential for conservation of the DPS. The decommissioning of these dams began in 2011 and will allow steelhead and other salmonids access to at least 45 miles (72 km) of habitat in the basin upstream (WDFW, 2011; Olympic National Park, 2012). The Team determined that stream reaches above both dams are essential for conservation of the DPS, noting the significant amount of additional spawning habitat available relative to other much smaller

streams in the Strait of Juan de Fuca, as well as the high likelihood that these habitats will likely be able to support both summer- and winter-run life forms of steelhead. We seek comments and information specific to this unoccupied area and our conclusion that it is essential to the conservation of Puget Sound steelhead.

Nearshore Marine Areas of Puget Sound—Unlike most other Pacific salmonids, steelhead appear to make only ephemeral use of nearshore marine waters. The species' lengthy freshwater rearing period results in large smolts that are prepared to move rapidly through estuaries and nearshore waters to forage on larger prey in offshore marine areas (Quinn, 2005; Welch, 2010). Although data specific to Puget Sound are limited, recent studies of steelhead migratory behavior strongly suggest that juveniles spend little time (a matter of hours in some cases) in estuarine and nearshore areas and do not favor migration along shorelines (Moore *et al.*, 2010a, Moore *et al.*, 2010b; Romer, 2010). In contrast, stream-type Puget Sound Chinook and Hood Canal summer-run chum salmon are known to make extensive use of nearshore areas in Puget Sound, spending from several days to several months in and adjacent to natal estuaries (WDFW and Point No Point Treaty Tribes, 2000; Redman *et al.*, 2005; Fresh, 2006). That well-documented behavior led us to designate specific nearshore areas as critical habitat for those two species (70 FR 52630, September 2, 2005). The data for steelhead, however, suggest the opposite conclusion.

Anecdotal reports suggest that juvenile steelhead may travel short distances in nearshore areas as they move between adjacent river mouths. There are similar reports of limited nearshore use by precocious steelhead (i.e., fish that are reproductively mature but have not reached their typical adult age and size). Although such behaviors could be

important life history strategies for steelhead, it is uncertain whether and where such behaviors occur in Puget Sound. Therefore, given the best available information, we conclude that there are not specific nearshore areas within the geographical area occupied by Puget Sound steelhead on which are found those physical or biological features essential to their conservation. We request comments and information regarding this conclusion.

#### Application of ESA Section 4(b)(2)

The foregoing discussion describes those areas that are eligible for designation as critical habitat – the specific areas that fall within the ESA section 3(5)(A) definition of critical habitat, not including lands owned or controlled by the Department of Defense, or designated for its use, that are covered by an INRMP that we have determined in writing provides a benefit to the species. Specific areas eligible for designation are not automatically designated as critical habitat. Section 4(b)(2) of the ESA requires that the Secretary consider the economic impact, impact on national security, and any other relevant impact of designating those areas. The Secretary has the discretion to exclude a “particular area” from designation if he determines the benefits of exclusion (that is, avoiding the impact that would result from designation), outweigh the benefits of designation. The Secretary may not exclude an area from designation if, based on the best available scientific and commercial information, exclusion will result in the extinction of the species. Because the authority to exclude is “wholly” discretionary, exclusion is not required for any areas.

The first step in conducting an ESA section 4(b)(2) analysis is to identify the “particular areas” to be analyzed. Section 3(5) of the ESA defines critical habitat as



“specific areas,” while section 4(b)(2) requires the agency to consider certain factors before designating any “particular area.” Depending on the biology of the species, the characteristics of its habitat, and the nature of the impacts of designation, “specific” areas might be different from, or the same as, “particular” areas. For lower Columbia River coho and Puget Sound steelhead, we analyzed two types of “particular” areas. Where we considered economic impacts, and weighed the economic benefits of exclusion against the conservation benefits of designation, we used the same biologically based “specific” areas we had identified under section 3(5)(A), the HUC5 watershed. This worked well because upslope and upstream activities in a watershed can affect the stream within the watershed (see the draft Economic Analysis Report (NMFS 2012b) for definition of the HUC5s and more information). This approach allowed us to most effectively consider the conservation value of the different areas when balancing conservation benefits of designation against economic benefits of exclusion. Where we considered impacts on Indian lands and lands subject to a habitat conservation plan (HCP), however, we instead used a delineation of “particular” areas based on ownership or control of the area. Specifically, these particular areas consisted of occupied freshwater and estuarine areas that overlap with Indian and HCP lands. This approach allowed us to consider impacts and benefits associated with land ownership and management by Indian tribes and HCP partners.

The use of two different types of areas required us to account for overlapping boundaries (that is, ownership may span many watersheds and watersheds may have mixed ownership). The order in which we conducted the 4(b)(2) balancing became important because of this overlap. To ensure we were not double-counting the benefits of

exclusion, we first considered exclusion of particular areas based on land ownership and determined which areas to recommend for exclusion. We then considered economic exclusion of particular areas based on watersheds, with the economic impact for each watershed adjusted based on whether a given type of ownership had already been recommended for exclusion.

### Benefits of Designation

The primary benefit of designation is the protection afforded under the ESA section 7 requirement that all Federal agencies ensure their actions are not likely to destroy or adversely modify designated critical habitat. This type of benefit is sometimes referred to as an incremental benefit because the protections afforded to the species from critical habitat designation are in addition to the requirement that all Federal agencies ensure their actions are not likely to jeopardize the continued existence of the species. In addition, the designation may enhance the conservation of habitat by informing the public about areas and features important to species conservation, which may help focus and contribute to conservation efforts for salmon and steelhead and their habitats.

With sufficient information, it may be possible to monetize these benefits of designation by first quantifying the benefits expected from an ESA section 7 consultation and translating that into dollars. We are not aware, however, of any available data to monetize the benefits of designation (e.g., estimates of the monetary value of the physical and biological features within specific areas that meet the definition of critical habitat, or of the monetary value of general benefits such as education and outreach). In an alternative approach that we have commonly used in the past (70 FR 52630, September 2, 2005), we qualitatively assessed the benefit of designation for each of the specific areas

identified as meeting the definition of critical habitat for each DPS. Our qualitative consideration began with an evaluation of the conservation value of each area. We considered a number of factors to determine the conservation value of an area, including the quantity and quality of physical or biological features, the relationship of the area to other areas within the DPS, and the significance to the DPS of the population occupying that area.

There are many Federal activities that occur within the specific areas that could impact the conservation value of these areas. Regardless of designation, Federal agencies are required under Section 7 of the ESA to ensure these activities are not likely to jeopardize the continued existence of lower Columbia River coho and Puget Sound steelhead. If the specific areas are designated as critical habitat, Federal agencies will additionally be required to ensure their actions are not likely to adversely modify the critical habitat. We grouped the potential Federal activities that would be subject to this additional protection into several broad categories: water supply, in-stream work, development, Federal lands management, transportation, utilities, mining, and hydropower.

The benefit of designating a particular area depends upon the likelihood of a section 7 consultation occurring in that area and the degree to which a consultation would yield conservation benefits for the species. Based on past consultations for listed salmon and steelhead in this region, we estimated that a total of 55 actions would require section 7 consultation annually for lower Columbia River coho within the particular areas being considered for designation (NMFS, 2012b). For Puget Sound steelhead, we estimated that a total of 117 actions would require section 7 consultation annually within the

particular areas being considered for designation (NMFS, 2012b). The most common activity types subject to consultation in the range of each DPS would be in-stream work and transportation projects, accounting for approximately 80 percent of estimated actions (a complete list of the estimated annual actions, allocated by particular area, is included in the Draft Economic Analysis [NMFS, 2012b]). These activities have the potential to adversely affect water quality and substrate composition and quality for salmon and steelhead. Consultation would yield conservation benefits for the species by preventing or ameliorating such habitat effects.

#### Impacts of Designation

Section 4(b)(2) of the ESA provides that the Secretary shall consider “the economic impact, impact on national security, and any other relevant impact of specifying any particular area as critical habitat.” The primary impact of a critical habitat designation stems from the requirement under section 7(a)(2) of the ESA that Federal agencies ensure their actions are not likely to result in the destruction or adverse modification of critical habitat. Determining this impact is complicated by the fact that section 7(a)(2) contains the overlapping requirement that Federal agencies must ensure their actions are not likely to jeopardize the species’ continued existence. The true impact of designation is the extent to which Federal agencies modify their actions to ensure their actions are not likely to destroy or adversely modify the critical habitat of the species, beyond any modifications they would make because of listing and the jeopardy requirement. Additional impacts of designation include state and local protections that may be triggered as a result of the designation. In addition, if the area proposed for designation overlaps an area already designated as critical habitat for another species, the

true impact of designation is the modification Federal agencies would make beyond any modification they would make to avoid adversely modifying the already-designated critical habitat.

In determining the impacts of designation, we predicted the incremental change in Federal agency actions as a result of critical habitat designation and the adverse modification prohibition, beyond the changes predicted to occur as a result of listing and the jeopardy provision. In August 2012 we and the U.S. Fish and Wildlife Service published a proposed rule to amend our joint regulations at 50 CFR 424.19 to clarify that in considering impacts of designation as required by Section 4(b)(2), we would consider the incremental impacts (77 FR 51503, August 24, 2012). This approach is in contrast to our 2005 critical habitat designations for salmon and steelhead (70 FR 52630, September 2, 2005) and for Southern Resident killer whales (71 FR 69054, November 29, 2006), where we considered the “coextensive” impact of designation. The consideration of co-extensive impacts was in accordance with a Tenth Circuit Court decision (New Mexico Cattle Growers Association v. U.S. Fish and Wildlife Service, 248 F.3d 1277 (10th Cir. 2001)). More recently, several courts (including the 9th Circuit Court of Appeals) have approved an approach that considers the incremental impact of designation. The Federal Register Notice announcing the proposed policy on considering impacts of designation (77 FR 51503, August 24, 2012) describes and discusses these court cases (Arizona Cattlegrowers’ Ass’n v. Salazar, 606 F3d 1160, 1172-74 (9th Cir. 2010), cert. denied, 131 S.Ct. 1471, 179 L. Ed. 2d 300 (2011); Homebuilders Ass’n v. FWS, 616 F3d 983 (9th Cir. 2010) cert. denied, 131 S. Ct. 1475, 179 L. Ed. 2d 301 (2011); M-3706 The Secretary’s Authority to Exclude Areas from Critical Habitat Designation Under 4(b)(2)

of the Endangered Species Act (October 3, 2008) (DOI 2008)). In more recent critical habitat designations, both NMFS and the U.S. Fish and Wildlife Service have considered the incremental impact of critical habitat designation (for example, NMFS' designation of critical habitat for the Southern DPS of green sturgeon (74 FR 52300, October 9, 2009) and the Southern DPS of Pacific eulachon (76 FR 65324, October 20, 2011), and the U.S. Fish and Wildlife's designation of critical habitat for the Oregon chub (75 FR 11031, March 10, 2010)). Consistent with our proposed regulatory amendments, the more recent court cases, and more recent agency practice, we estimated the incremental impacts of designation, beyond the impacts that would result from the listing and jeopardy provision. In addition, because these proposed designations almost completely overlap our previous salmonid critical habitat designations, and the essential features are the same, we estimated only the incremental impacts of designation beyond the impacts already imposed by those prior designations.

To determine the impact of designation, we examined what the state of the world would be with the designation of critical habitat for the lower Columbia River coho and Puget Sound steelhead DPSs and compared it to the state of the world without the designations. The "without critical habitat" scenario represents the baseline for the analysis. It includes process requirements and habitat protections already afforded these DPSs under their Federal listing or under other Federal, state, and local regulations. Such regulations include protections afforded to habitat supporting these two DPSs from other co-occurring ESA listings and critical habitat designations, in particular listings/designations for West Coast salmon and steelhead (70 FR 52630, September 2, 2005). In the case of lower Columbia River coho, the proposed designation overlaps with

existing designations for lower Columbia River steelhead and Chinook, and Columbia River chum, as well as several DPSs that spawn upstream in the middle and upper Columbia and Snake Rivers. In the case of Puget Sound steelhead, the proposed designation overlaps with existing designations for Puget Sound Chinook and Hood Canal summer-run chum. The "with critical habitat" scenario describes the incremental impacts associated specifically with the designation of critical habitat for lower Columbia River coho and Puget Sound steelhead. The primary impacts of critical habitat designation we found were: (1) the costs associated with additional administrative effort of including a critical habitat analysis in section 7 consultations for these two DPSs; (2) project modifications required solely to avoid destruction or adverse modification of their critical habitat; (3) potential impacts on national security if particular areas were designated critical habitat for Puget Sound steelhead; and (4) the possible harm to our working relationship with Indian tribes and some HCP landowners. There are no military areas eligible for designation that overlap with critical habitat areas, so we did not consider impacts to national security. Because we have chosen to balance benefits and consider exclusions, we consider these impacts in more detail below in the section devoted to each type of impact.

### Economic Impacts

Our economic analysis sought to determine the impacts on land uses and activities from the proposed designation of critical habitat that are above and beyond – or incremental to – those “baseline” impacts due to existing or planned conservation efforts being undertaken due to other Federal, State, and local regulations or guidelines (NMFS, 2012b). Other Federal agencies, as well as State and local governments, may also seek to

protect the natural resources under their jurisdiction. If compliance with the Clean Water Act or State environmental quality laws, for example, protects habitat for the species, such protective efforts are considered to be baseline protections and costs associated with these efforts are not quantified as impacts of critical habitat designation.

When critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure that their actions will not result in the destruction or adverse modification of critical habitat (in addition to ensuring that the actions are not likely to jeopardize the continued existence of the species). The added administrative costs of considering critical habitat in section 7 consultations and the additional impacts of implementing project modifications to protect critical habitat are the direct result of the designation of critical habitat. These costs are not in the baseline, and are considered incremental impacts of the rulemaking.

Incremental impacts may also include the direct costs associated with additional effort for future consultations, reinitiated consultations, new consultations occurring specifically because of the designation, and additional project modifications that would not have been required to avoid jeopardizing the continued existence of the species. Additionally, incremental impacts may include indirect impacts resulting from reaction to the potential designation of critical habitat (e.g., developing ESA habitat conservation plans (HCPs) in an effort to avoid designation of critical habitat), triggering of additional requirements under State or local laws intended to protect sensitive habitat, and uncertainty and perceptual effects on markets.

To evaluate the economic impact of critical habitat we first examined our ESA section 7 consultation record for West Coast salmon and steelhead. That voluminous



record includes consultations on habitat-modifying Federal actions both where critical habitat has been designated and where it has not. As further explained in the supporting economic report (NMFS, 2012b), to quantify the economic impact of designation, we employed the following three steps:

(1) Define the geographic study area for the analysis, and identify the units of analysis (the “particular areas”). In this case, we defined HUC5 watersheds that encompass occupied stream reaches as the study area.

(2) Identify potentially affected economic activities and determine how management costs may increase due to the designation of critical habitat for lower Columbia River coho and Puget Sound steelhead, both in terms of project administration and project modification.

(3) Estimate the economic impacts associated with these changes in management.

We estimated a total annualized incremental cost of approximately \$357,815 for designating all specific areas as critical habitat for lower Columbia River coho. The greatest costs are associated with transportation, water supply, and in-stream work activities (see NMFS, 2012b). The Columbia Slough/Willamette River HUC5 watershed had the largest estimated annual impacts (\$54,000) while the Jackson Prairie HUC5 watershed had the lowest, with zero estimated annual impacts (NMFS, 2012b).

For Puget Sound steelhead, we estimated a total annualized incremental administrative cost of approximately \$460,924 for designating all specific areas as critical habitat. The greatest costs are associated with transportation and in-stream work activities (see NMFS, 2012b). Several watersheds located throughout the range of the

DPS had zero estimated annual impacts, while the Lake Washington HUC5 watershed had the largest estimated annual impacts (\$103,000) (NMFS, 2012b).

In weighing economic impacts, we followed the policy direction in Executive Order 12866 to “maximize net benefits” and seek to achieve regulatory objectives in “the most cost effective manner.” Consistent with our past practice for salmon and steelhead critical habitat designations, we took into consideration a cost-effectiveness approach giving priority to excluding habitat areas with a relatively lower benefit of designation and a relatively higher economic impact. The circumstances of these and other listed salmon and steelhead DPSs can make a cost-effectiveness approach useful because different areas have different conservation value relative to one another. Pacific salmon and steelhead are wide-ranging species and occupy numerous habitat areas with thousands of stream miles. Not all occupied areas are of equal importance to conserving a DPS. Within the currently occupied range there are areas that historically were more or less productive, that are currently more or less degraded, or that support populations that are more or less central to conservation of the DPS as a whole. As a result, in many cases it may be possible to construct a designation scenario in which conservation of the DPS as a whole will be possible even if the entire area meeting the definition of critical habitat is not designated. This creates the potential to consider exclusions where conservation values are relatively low and economic impacts are relatively high. This is the same approach we took in our 2005 salmonid critical habitat designations (70 FR 52630, September 2, 2005) and green sturgeon critical habitat designation (74 FR 52300, October 9, 2009).

In seeking a cost-effective designation that would minimize economic impacts, we also heeded the policy direction to conserve salmon and steelhead habitat described above. In accordance with the policy direction to conserve salmon and steelhead habitat, we do not propose to exclude any habitat areas based on economic impacts if exclusion would “significantly impede conservation.” We adopted this test because habitat loss and degradation are leading factors for the decline of both DPSs (70 FR 37160, June 28, 2005; 72 FR 26722, May 11, 2007), and habitat protection and restoration have been identified as key actions in Lower Columbia River and Puget Sound recovery plans and assessments (Puget Sound Salmon Recovery Plan, 2009; Judge, 2011; NMFS, 2012d). Consistent with this test, we did not consider any areas for an economic exclusion that we had identified as having a high conservation value. We gave greater weight to the benefit of designating these high value areas than to the benefit of avoiding economic impacts because of the historic loss and degradation of habitat, the ongoing threats to habitat, and the importance of habitat protection and restoration in recovering the DPSs. The approach taken here is the same approach we took in our 2005 salmon and steelhead critical habitat designations (70 FR 52630, September 2, 2005) and green sturgeon critical habitat designation (74 FR 52300, October 9, 2009). Also consistent with this test, we do not propose to exclude any medium or low quality habitat areas if we concluded that their exclusion would significantly impede conservation, as described further below.

In the first step of balancing economic benefits, we identified for potential exclusion the low value habitat areas with an annual economic impact greater than or equal to \$10,000 and the medium value habitat areas with an annual economic impact

greater than or equal to \$100,000. These dollar thresholds are substantially lower than the thresholds we used in our 2005 designations because here we have used the incremental impact of designation, while in the 2005 rule we used the co-extensive impact of designation. (Our 2005 rule explains in greater detail how and why we relied on co-extensive impacts [see 70 FR 52630, September 2, 2005 and NMFS, 2005].) As with the 2005 designations, the thresholds we selected for identifying habitat areas eligible for exclusion do not represent an objective judgment that, for example, a low value area is worth a certain dollar amount and no more. The statute directs us to balance dissimilar values but also emphasizes the discretionary nature of the balancing task. The cost estimates developed by our economic analysis do not have obvious break points that would lead to a logical division between “high,” “medium,” and “low” costs. Given these factors, a judgment that any particular dollar threshold is objectively “right,” would be neither necessary nor possible. Rather, what economic impact is “high” and, therefore, might outweigh the benefit of designating a medium or low value habitat area is a matter of discretion and depends on the policy context.

In the second step of the process, we asked the Teams whether exclusion of any of the low- or medium-value habitat areas would significantly impede conservation of the DPS. The Teams considered this question in the context of: (1) the Indian lands and HCP lands they assumed would be excluded based on “other relevant impacts” (exclusions discussed later in this report); (2) all of the areas eligible for economic exclusion; and (3) the information they had developed in providing the initial conservation ratings. The Critical Habitat Designations section below describes the results of applying the two-step

process to each DPS. The results are discussed in greater detail in a separate report that is available for public review and comment (NMFS, 2012c).

#### Other Relevant Impacts - Impacts to Tribal Sovereignty and Self-governance

Much of the benefit of designating critical habitat on Indian lands is the same as designating critical habitat on other lands. In an ESA section 7 consultation, Federal agencies must ensure their actions do not destroy or adversely modify the designated critical habitat, in addition to ensuring their actions do not jeopardize the continued existence of the species. There is a broad array of activities on Indian lands that may trigger section 7 consultations. The other benefit is the notice that designation gives that an area is important to conservation of the species. Both of these benefits may be diminished by the fact that tribes are actively working to address the habitat needs of the species on their lands as well as in the larger ecosystem, and are fully aware of the conservation value of their lands. (This is documented in correspondence from the tribes, several in response to the agency's ANPR (76 FR 1392, January 10, 2011)).

Indian lands potentially affected by a critical habitat designation only occur within the range of the Puget Sound steelhead DPS, and they comprise only a minor portion (approximately 2 percent) of the total habitat under consideration for designation (NMFS, 2012c). This percentage is likely an overestimate as it includes all habitat area within reservation boundaries. In many cases, a considerable portion of the land within the reservation boundaries is no longer held in trust for the tribe or in fee status by individual tribal members.

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders, judicial decisions, and

agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian Tribes with respect to Indian lands, tribal trust resources, and the exercise of tribal rights (e.g., Executive Order 13175 and Secretarial Order 3206). Pursuant to these federal policies and authorities lands have been retained by Indian Tribes or have been set aside for tribal use. These lands are managed by Indian Tribes in accordance with tribal goals and objectives within the framework of applicable treaties and laws.

In addition to the distinctive trust relationship, for Pacific salmonids in the Northwest, there is a unique partnership between the Federal government and Indian tribes regarding salmonid management. Northwest Indian tribes are regarded as “co-managers” of the salmonid resource, along with Federal and state managers. This co-management relationship evolved as a result of numerous court decisions clarifying the tribes’ treaty right to take fish in their usual and accustomed places. The tribes have stated in letters and meetings that designation of Indian lands as critical habitat will undermine long-term working relationships and reduce the capacity of tribes to participate at current levels in the many and varied forums addressing ecosystem management and conservation of fisheries resources. In the decision Center for Biological Diversity v. Norton, 240 F. Supp. 2d 1090 (D. Ariz. 2003), the court held that a positive working relationship with Indian tribes is a relevant impact that can be considered when weighing the relative benefits of a critical habitat.

The current co-manager process addressing activities on an ecosystem-wide basis throughout the Northwest is beneficial for the conservation of the salmonids. We also believe that maintaining our current co-manager relationship consistent with existing policies is an important benefit to continuing our tribal trust responsibilities and relationship. Based upon our consultation with the Tribes, we believe that designation of Indian lands as critical habitat would adversely impact our working relationship and the benefits resulting from this relationship. The benefits of excluding Indian lands from designation include: (1) furthering established national policies, our Federal trust obligations and our deference to the tribes in management of natural resources on their lands; (2) maintaining effective long-term working relationships to promote the conservation of salmonids on an ecosystem wide basis across four states; (3) allowing continued meaningful collaboration and cooperation in scientific work to learn more about the conservation needs of the species on an ecosystem-wide basis; and (4) continued respect for tribal sovereignty over management of natural resources on Indian lands through established tribal natural resource programs.

Based upon these considerations, we have determined to exercise agency discretion under ESA section 4(b)(2) and propose to exclude Indian lands from the critical habitat designation for Puget Sound steelhead. The Indian lands specifically excluded from critical habitat are those defined in the Secretarial Order, including: (1) lands held in trust by the United States for the benefit of any Indian tribe; (2) lands held in trust by the United States for any Indian Tribe or individual subject to restrictions by the United States against alienation; (3) fee lands, either within or outside the reservation boundaries, owned by the tribal government; and (4) fee lands within the reservation

boundaries owned by individual Indians. These particular areas comprise only 2 percent of the total area under consideration for designation as critical habitat for Puget Sound steelhead (NMFS, 2012c).

Other Relevant Impacts - Impacts to Landowners with Contractual Commitments to Conservation

Conservation agreements with non-Federal landowners (e.g., HCPs) enhance species conservation by extending species protections beyond those available through section 7 consultations. We have encouraged non-Federal landowners to enter into conservation agreements, based on a view that we can achieve greater species' conservation on non-Federal land through such voluntary partnerships than we can through coercive methods (61 FR 63854, December 2, 1996).

Section 10(a)(1)(B) of the ESA authorizes us to issue to non-Federal entities a permit for the incidental take of endangered and threatened species. This permit allows a non-Federal landowner to proceed with an activity that is legal in all other respects, but that results in the incidental taking of a listed species (i.e., take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity). The ESA specifies that an application for an incidental take permit must be accompanied by a conservation plan, and specifies the content of such a plan. The purpose of such an HCP is to describe and ensure that the effects of the permitted action on covered species are adequately minimized and mitigated, and that the action does not appreciably reduce the likelihood of the survival and recovery of the species.

In previous critical habitat designations for West Coast salmon and steelhead (70 FR 52630, September 2, 2005), we have exercised discretion to exclude some (but not



all) lands covered by an HCP from designation after concluding that benefits of exclusion outweighed the benefits of designation. For lands covered by an HCP, the benefits of designation typically arise from section 7 protections as well as enhanced public awareness. The benefits of exclusion generally include relieving regulatory burdens on existing conservation partners, maintaining good working relationships with them (thus enhancing implementation of existing HCPs), and encouraging the development of new partnerships.

We contacted the HCP landowners whose lands were excluded in our 2005 designations (Washington Department of Natural Resources, Green Diamond Resources Company, and West Fork Timber Company) to discuss the critical habitat designations for lower Columbia River coho and Puget Sound steelhead. We also contacted several additional landowners whose HCPs had been authorized subsequent to our 2005 critical habitat designations (Washington Forest Practices, City of Portland-Bull Run Water Supply, City of Kent Water Supply) or were existing then but now determined to overlap with new habitat areas being considered for designation (J.L. Storedahl and Sons). All of them except one (City of Portland) requested that their lands be excluded from designation as critical habitat for these DPSs, and were of the opinion that exclusion would be a benefit and enhance the partnership between NMFS and the HCP landowner. We also reviewed the activities covered by the HCPs, the protections afforded by the HCP agreement, and the Federal activities that are likely to occur on the affected lands (NMFS, 2012c). From this information we determined that the conservation benefits to the species from the HCPs outweigh the conservation benefits of designation and therefore are proposing to exclude HCP lands where the landowner requested exclusion.

## Exclusion Will Not Result in Extinction of the Species

Section 4(b)(2) limits our discretion to exclude areas from designation if exclusion will result in extinction of the species.

Since we have not recommended excluding any habitat areas based on economic impacts if the exclusion would significantly impede conservation, we have determined for each DPS that the exclusion of the areas we recommend based on economic impacts will not result in the extinction of either DPS. All areas proposed for exclusion are of low conservation value. Moreover, they comprise a small fraction – less than 5 percent – of all habitat areas considered for designation as critical habitat for either DPS.

We also conclude that excluding Indian lands – and thereby furthering the federal government’s policy of promoting respect for tribal sovereignty and self-governance – will not result in extinction of either species. Habitat on Indian lands represents a small proportion of total area occupied by the Puget Sound steelhead DPS, and the Tribes are actively engaged in fisheries, habitat management, and species recovery programs that benefit steelhead and other salmonids.

In addition, we conclude that excluding lands covered by several HCPs will not result in extinction of either species. These particular HCPs result in management actions that promote conservation of the listed species in a manner that is not available through the section 7 requirements regarding critical habitat. Excluding these HCP areas from designation is expected to enhance our relationship with the landowner and may provide an incentive to other landowners to seek conservation agreements with us. These outcomes will in turn generally benefit our recovery efforts to foster voluntary efforts on

vast areas of nonfederal lands which make up a large proportion of each species' range and will play a critical role in avoiding species extinction.

In total, for Lower Columbia River coho we are proposing to designate 2,288 stream miles and exclude 1,065 stream miles, and for Puget Sound steelhead we are proposing to designate 1,880 stream miles and exclude 1,639 stream miles. For the following reasons, we conclude that these exclusions in combination will not result in the extinction of either DPS: (1) except for exclusions due to economic impacts, there are no watersheds that are proposed for exclusion in their entirety. The most area excluded for any single watershed is the Puget Sound/East Passage watershed, with 70% proposed for exclusion due to the presence of HCPs. This area was rated as having a low conservation value; (2) although the extent of the exclusions overall is significant (nearly 50% of the critical habitat for Puget Sound steelhead and nearly 30% of the critical habitat for lower Columbia coho), and many of the areas excluded are of medium or high conservation value to the species, most of the exclusions are based on the presence of HCPs, which have a conservation benefit for the species. Also, the likely leverage to obtain significant conservation benefits from an ESA section 7 consultation is expected to be low for most areas. Because the presence of high quality forested habitat is key to salmon and steelhead recovery, the protections of the HCP, which all involve forested/riparian lands, will have significant benefits over the long term as riparian forest habitat is developed. In addition, we believe that the HCP exclusions in particular may provide an incentive to other landowners to seek conservation agreements with us; (3) the few cases where an entire watershed was proposed for exclusion (due to economic impacts) all involved habitat areas that the Teams deemed to be of low conservation

value; and (4) the proposed Indian land exclusions involve stream reaches that are already managed by the tribes for salmonid conservation.

#### Critical Habitat Designations

In previous salmonid critical habitat designations we identified the end-point of designated stream segments using latitude and longitude coordinates and provided maps depicting the designated areas (70 FR 52630, September 2, 2005). In May of 2012, we and the USFWS amended our regulations regarding critical habitat designation (77 FR 25611, May 1, 2012). The revised regulation provides that the boundaries of critical habitat as mapped or otherwise described in the Regulation Promulgation section of a rulemaking published in the Federal Register will be the official delineation of the designation (50 CFR 424.12). In this proposed designation we include both the latitude-longitude coordinates and maps to make it easier to compare the areas proposed for designation with overlapping areas designated for other salmon and steelhead DPSs in 2005 (70 FR 52630, September 2, 2005).

#### Lower Columbia River Coho Salmon

We are proposing to designate approximately 2,288 stream miles (3,681 km) within the geographical area presently occupied by the lower Columbia River coho DPS (see Table 1). Other ESA-listed species in this area with designated critical habitat include lower Columbia River Chinook and steelhead, Columbia River chum (70 FR 52630, September 2, 2005), bull trout (75 FR 63898, October 18, 2010), green sturgeon (74 FR 52300, October 9, 2009), and the Southern DPS of Pacific eulachon (76 FR 65324, October 20, 2011). Also, the mainstem lower Columbia River is designated critical habitat for numerous other salmon and steelhead DPSs whose spawning range is

upstream of the area presently occupied by lower Columbia River coho (70 FR 52630, September 2, 2005).

TABLE 1.—APPROXIMATE QUANTITY OF HABITAT AND OWNERSHIP WITHIN WATERSHEDS CONTAINING HABITAT AREAS PROPOSED FOR DESIGNATION AS CRITICAL HABITAT FOR LOWER COLUMBIA RIVER COHO SALMON

Streams and Lakes  mi (km)	Land ownership type (percent)			
	Federal	Tribal	State	Private
2,288 (3,681)	14.6	0	2.0	83.4

The areas proposed for designation are all occupied and contain physical and biological features essential to the conservation of the species and that may require special management considerations or protection. No unoccupied areas were identified that are considered essential for the conservation of the species, but several areas above Condit Dam on the White Salmon River may warrant consideration in the future. There are 55 watersheds within the range of this DPS. Three watersheds received a low conservation value rating, 18 received a medium rating, and 34 received a high rating (NMFS 2012a). The lower Columbia River rearing/migration corridor downstream of the spawning range is considered to have a high conservation value. As a result of the balancing process for economic impacts described above, we are proposing to exclude

from the designation all or portions of 28 watersheds listed in Table 2. Of the habitat areas eligible for designation, approximately 27 stream miles (43 km) or 0.8 percent are being proposed for exclusion because the economic benefits of exclusion outweigh the benefits of designation. Also, we are proposing to exclude approximately 1,038 stream miles (1,671 km) covered by four HCPs (J.L. Storedahl and Sons HCP, Washington Department of Natural Resources – West of Cascades HCP, Washington Forest Practices HCP, and West Fork Timber HCP) because the benefits of exclusion outweigh the benefits of designation. None of the HCP exclusions overlap with areas also proposed for exclusion due to economic impacts. Total potential estimated economic impact, with no exclusions, would be \$357,815. The proposed economic-related exclusions identified in Table 2 would reduce the total estimated economic impact approximately 4 percent to \$344,315 (NMFS, 2012b).

TABLE 2. HABITAT AREAS WITHIN THE GEOGRAPHICAL RANGE OF LOWER COLUMBIA RIVER COHO SALMON AND PROPOSED FOR EXCLUSION FROM CRITICAL HABITAT. WDNR = WASHINGTON DEPARTMENT OF NATURAL RESOURCES; WFP = WASHINGTON FOREST PRACTICES.

Watershed code	Watershed name	Area(s) proposed for exclusion
1707010509	Wind River	WFP HCP lands
1707010511	Wind River	WDNR and WFP HCP lands
1707010512	Middle Columbia/Grays Creek	WFP HCP lands
1707010513	Middle Columbia/Eagle Creek	WFP HCP lands

1708000106	Washougal River	WDNR and WFP HCP lands
1708000107	Columbia River Gorge Tributaries	WDNR and WFP HCP lands
1708000109	Salmon Creek	WDNR and WFP HCP lands
1708000201	Upper Lewis River	WFP HCP lands
1708000202	Muddy River	WFP HCP lands
1708000203	Swift Reservoir	WDNR and WFP HCP lands
1708000204	Yale Reservoir	WDNR and WFP HCP lands
1708000205	East Fork Lewis River	WDNR, WFP, and Storedahl HCP lands
1708000206	Lower Lewis River	WDNR and WFP HCP lands
1708000301	Kalama River	WDNR and WFP HCP lands
1708000304	Germany/Abernathy	WDNR and WFP HCP lands
1708000305	Skamokawa/Elochoman	WDNR and WFP HCP lands
1708000402	Upper Cowlitz River	WDNR and WFP HCP lands
1708000403	Cowlitz Valley Frontal	WDNR, WFP, and WFT HCP lands
1708000405	Lower Cispus River	WFP HCP lands
1708000501	Tilton River	WDNR, WFP, and WFT HCP lands
1708000502	Riffe Reservoir	WDNR and WFP HCP lands
1708000503	Jackson Prairie	WDNR and WFP HCP lands
1708000504	North Fork Toutle River	WDNR and WFP HCP lands

1708000506	South Fork Toutle River	WFP HCP lands
1708000507	East Willapa	WDNR and WFP HCP lands
1708000508	Coweeman	WDNR and WFP HCP lands
1708000603	Grays Bay	WDNR and WFP HCP lands
1709000704	Abernethy Creek	Entire watershed due to economic impacts

### Puget Sound Steelhead

We are proposing to designate approximately 1,880 stream miles (3,026 km) within the geographical area presently occupied by the Puget Sound steelhead DPS (see Table 3). Other ESA-listed salmonids in this area with designated critical habitat include Puget Sound Chinook, Hood Canal summer-run chum (70 FR 52630, September 2, 2005), and bull trout (75 FR 63898, October 18, 2010).

TABLE 3.—APPROXIMATE QUANTITY OF HABITAT AND OWNERSHIP WITHIN WATERSHEDS CONTAINING HABITAT AREAS PROPOSED FOR DESIGNATION AS CRITICAL HABITAT FOR PUGET SOUND STEELHEAD

Streams mi (km)	Land ownership type (percent)			
	Federal	Tribal	State	Private
1,880 (3,026)	15.5	0	3.8	80.7



Most of the areas proposed for designation are occupied and contain physical and biological features essential to the conservation of the species and that may require special management considerations or protection. One unoccupied area in the upper Elwha River watershed was identified as essential for the conservation of the species and is being proposed for designation as critical habitat. There are 66 watersheds within the range of this DPS. Nine watersheds received a low conservation value rating, 16 received a medium rating, and 41 received a high rating to the DPS (NMFS, 2012a).

Approximately 28 stream miles (45 km) are not proposed for designation because they are within lands controlled by the military that contain qualifying INRMPs. Approximately 68 miles (109 km) of stream are within the boundaries of Indian reservations, but only those reaches defined as Indian lands (see Government-to-Government Relationship With Tribes) are proposed for exclusion. Also, we are proposing to exclude approximately 1,434 miles (2,307 km) of stream covered by four HCPs (City of Kent, Green Diamond, Washington Department of Natural Resources – West of Cascades HCP, and Washington Forest Practices HCP) because the benefits of exclusion outweigh the benefits of designation. As a result of the balancing process for economic impacts described above, the Secretary is proposing to exclude from the designation all or portions of the 60 watersheds listed in Table 4. Of the habitat areas eligible for designation, approximately 138 stream miles (262 km) or 3.9 percent are being proposed for exclusion because the economic benefits of exclusion outweigh the benefits of designation. Only a small amount (24 stream miles (39 km)) proposed for exclusion due to economic impacts overlap with areas also proposed for exclusion as HCP lands or Indian lands. Total potential estimated economic impact, with no

exclusions, would be \$460,924. The proposed economic-related exclusions identified in Table 4 would reduce the total estimated economic impact approximately 29 percent to \$326,966 (NMFS, 2012c).

TABLE 4. HABITAT AREAS WITHIN THE GEOGRAPHICAL RANGE OF PUGET SOUND STEELHEAD AND PROPOSED FOR EXCLUSION FROM CRITICAL HABITAT. WDNR = WASHINGTON DEPARTMENT OF NATURAL RESOURCES; WFP = WASHINGTON FOREST PRACTICES.

Watershed code	Watershed name	Area(s) proposed for exclusion
1711000201	Bellingham Bay	WDNR and WFP HCP lands
1711000202	Samish River	WDNR and WFP HCP lands
1711000204	Birch Bay	WFP HCP lands
1711000401	Upper North Fork Nooksack River	WDNR and WFP HCP lands
1711000402	Middle Fork Nooksack River	WDNR and WFP HCP lands
1711000403	South Fork Nooksack River	Indian lands and WDNR and WFP HCP lands
1711000404	Lower North Fork Nooksack River	Indian lands and WDNR and WFP HCP lands
1711000405	Nooksack River	Indian lands and WDNR and WFP HCP lands
1711000504	Skagit River/Gorge Lake	WFP HCP lands
1711000505	Skagit River/Diobsud Creek	WDNR and WFP HCP lands

1711000506	Cascade River	WDNR and WFP HCP lands
1711000507	Skagit River/Illabot Creek	WDNR and WFP HCP lands
1711000508	Baker River	WFP HCP lands
1711000601	Upper Sauk River	WFP HCP lands
1711000603	Lower Suitttle River	WDNR and WFP HCP lands
1711000604	Lower Sauk River	Indian lands and WDNR and WFP HCP lands
1711000701	Middle Skagit River/Finney Creek	WDNR and WFP HCP lands
1711000702	Lower Skagit River/Nookachamps Creek	WDNR and WFP HCP lands
1711000801	North Fork Stillaguamish River	WDNR and WFP HCP lands
1711000802	South Fork Stillaguamish River	WDNR and WFP HCP lands and DOD lands
1711000803	Lower Stillaguamish River	WDNR and WFP HCP lands
1711000901	Tye and Beckler Rivers	WDNR and WFP HCP lands
1711000902	Skykomish River Forks	WDNR and WFP HCP lands
1711000903	Skykomish River/Wallace River	WDNR and WFP HCP lands
1711000904	Sultan River	WDNR and WFP HCP lands
1711000905	Skykomish River/Woods Creek	WDNR and WFP HCP lands
1711001003	Middle Fork Snoqualmie River	WDNR and WFP HCP lands
1711001004	Lower Snoqualmie River	WDNR and WFP HCP lands
1711001101	Pilchuck River	WDNR and WFP HCP lands

1711001102	Snohomish River	Indian lands and WDNR and WFP HCP lands
1711001201	Cedar River	WDNR and City of Kent HCP lands
1711001202	Lake Sammamish	Entire watershed due to economic impacts (including WDNR and WFP HCP lands)
1711001203	Lake Washington	Entire watershed due to economic impacts
1711001204	Sammamish River	Entire watershed due to economic impacts (including WDNR and WFP HCP lands)
1711001301	Upper Green River	WFP HCP lands
1711001302	Middle Green River	WDNR HCP lands
1711001401	Upper White River	WDNR and WFP HCP lands
1711001402	Lower White River	Indian lands and WFP HCP lands
1711001403	Carbon River	WDNR and WFP HCP lands
1711001405	Lower Puyallup River	Indian lands and WFP HCP lands
1711001502	Mashel/Ohop	WDNR and WFP HCP lands
1711001503	Lowland	Indian lands, DOD lands, and

		WFP HCP lands
1711001601	Prairie 1	WFP HCP lands
1711001602	Prairie 2	WFP HCP lands
1711001701	Skokomish River	Indian lands and WFP and Green Diamond HCP lands
1711001802	Lower West Hood Canal Frontal	WDNR and WFP HCP lands
1711001804	Duckabush River	WDNR and WFP HCP lands
1711001806	Big Quilcene River	WDNR and WFP HCP lands
1711001807	Upper West Hood Canal Frontal	WDNR and WFP HCP lands and DOD lands
1711001808	West Kitsap	WDNR and WFP HCP lands
1711001900	Kennedy/Goldsborough	Indian lands and WDNR and WFP, and Green Diamond HCP lands
1711001901	Puget	WDNR and WFP HCP lands
1711001902	Prairie 3	WDNR and WFP HCP lands
1711001906	Chambers Creek	DOD Lands
1711001908	Port Ludlow/Chimacum Creek	WDNR and WFP HCP lands
1711002001	Discovery Bay	WDNR and WFP HCP lands
1711002002	Sequim Bay	Indian lands and WDNR and WFP HCP lands
1711002003	Dungeness River	WDNR and WFP HCP lands

1711002004	Port Angeles Harbor	WDNR and WFP HCP lands
1711002007	Elwha River	Indian lands and WDNR and WFP HCP lands

#### Lateral Extent of Critical Habitat

In past designations we have described the lateral extent of critical habitat in various ways ranging from fixed distances to “functional” zones defined by important riparian functions (65 FR 7764, February 16, 2000). Designating a set riparian zone width will (in some places) accurately reflect the distance from the stream on which PCEs might be found, but in other cases may over- or understate the distance.

Designating a functional buffer avoids that problem, but makes it difficult for Federal agencies to know in advance what areas are critical habitat. To address these issues we are proposing to define the lateral extent of designated critical habitat as the width of the stream channel defined by the ordinary high water line as defined by the U.S. Army Corps of Engineers in 33 CFR 329.11. In areas for which ordinary high-water has not been defined pursuant to 33 CFR 329.11, the width of the stream channel shall be defined by its bankfull elevation. Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain (Rosgen, 1996) and is reached at a discharge which generally has a recurrence interval of 1 to 2 years on the annual flood series (Leopold et al., 1992). Such an interval is commensurate with nearly all of the juvenile freshwater life phases of most salmon and steelhead DPSs. Therefore, it is reasonable to assert that for an occupied stream reach this lateral extent is regularly “occupied.”

Moreover, the bankfull elevation can be readily discerned for a variety of stream reaches

and stream types using recognizable water lines (e.g., marks on rocks) or vegetation boundaries (Rosgen, 1996). Since 2005 this has proven to be a successful approach for defining the lateral extent of critical habitat for West Coast salmon and steelhead (70 FR 52630, September 2, 2005); therefore, we propose to continue the practice in this proposed rule.

As underscored in previous critical habitat designations, the quality of aquatic habitat within stream channels is intrinsically related to the adjacent riparian zones and floodplain, to surrounding wetlands and uplands, and to non-fish-bearing streams above occupied stream reaches. Human activities that occur outside the stream or designated critical habitat can modify or destroy physical and biological features of the stream. In addition, human activities that occur within and adjacent to reaches upstream (e.g., road failures) or downstream (e.g., dams) of designated stream reaches can also have demonstrable effects on physical and biological features of designated reaches. This designation will help to ensure that Federal agencies are aware of these important habitat linkages for lower Columbia River coho and Puget Sound steelhead.

In the few cases where we are proposing to designate lakes/reservoirs as critical habitat, the lateral extent may best be defined as the perimeter of the water body as displayed on standard 1:24,000 scale topographic maps or the elevation of ordinary high water, whichever is greater.

#### Effects of Critical Habitat Designation

Section 7(a)(2) of the ESA requires Federal agencies to insure that any action authorized, funded, or carried out by the agency (agency action) does not jeopardize the continued existence of any threatened or endangered species or destroy or adversely

modify designated critical habitat. Federal agencies are also required to confer with us regarding any actions likely to jeopardize a species proposed for listing under the ESA, or likely to destroy or adversely modify proposed critical habitat, pursuant to section 7(a)(4). A conference involves informal discussions in which we may recommend conservation measures to minimize or avoid adverse effects. The discussions and conservation recommendations are to be documented in a conference report provided to the Federal agency. If requested by the Federal agency, a formal conference report may be issued (including a biological opinion prepared according to 50 CFR 402.14). A formal conference report may be adopted as the biological opinion when the species is listed or critical habitat designated, if no significant new information or changes to the action alter the content of the opinion.

When a species is listed or critical habitat is designated, Federal agencies must consult with NMFS on any agency actions to be conducted in an area where the species is present and that may affect the species or its critical habitat. During the consultation, we would evaluate the agency action to determine whether the action may adversely affect listed species or critical habitat and issue our findings in a biological opinion or concurrence letter. If we conclude in the biological opinion that the agency action would likely result in the destruction or adverse modification of critical habitat, we would also recommend any reasonable and prudent alternatives to the action. Reasonable and prudent alternatives (defined in 50 CFR 402.02) are alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal



authority and jurisdiction, that are economically and technologically feasible, and that would avoid the destruction or adverse modification of critical habitat.

Regulations at 50 CFR 402.16 require Federal agencies that have retained discretionary involvement or control over an action, or where such discretionary involvement or control is authorized by law, to reinstate consultation on previously reviewed actions in instances where: (1) critical habitat is subsequently designated; or (2) new information or changes to the action may result in effects to critical habitat not previously considered in the biological opinion. Consequently, some Federal agencies may request reinstatement of a consultation or conference with us on actions for which formal consultation has been completed, if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

Activities subject to the ESA section 7 consultation process include activities on Federal lands and activities on private or state lands requiring a permit from a Federal agency (e.g., a Clean Water Act, Section 404 dredge or fill permit from U.S. Army Corps of Engineers) or some other Federal action, including funding (e.g., Federal Highway Administration funding for transportation projects). ESA section 7 consultation would not be required for Federal actions that do not affect listed species or critical habitat and for actions on non-Federal and private lands that are not Federally funded, authorized, or carried out.

#### Activities That May be Affected by Critical Habitat Designation

ESA section 4(b)(8) requires in any proposed or final regulation to designate critical habitat an evaluation and brief description of those activities (whether public or private) that may adversely modify such habitat or that may be affected by such

designation. A wide variety of activities may affect the proposed critical habitat and may be subject to the ESA section 7 consultation process when carried out, funded, or authorized by a Federal agency. These include water and land management actions of Federal agencies (e.g., U.S. Forest Service (USFS)), Bureau of Land Management (BLM), U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (BOR), Natural Resource Conservation Service, National Park Service (NPS), Bureau of Indian Affairs (BIA), the Federal Energy Regulatory Commission (FERC), and the Nuclear Regulatory Commission (NRC)) and related or similar Federally-regulated projects and activities on Federal lands, including hydropower sites licensed by the FERC; nuclear power sites licensed by the NRC; dams built or operated by the USACE or BOR; timber sales and other vegetation management activities conducted by the USFS, BLM and BIA; irrigation diversions authorized by the USFS and BLM; and road building and maintenance activities authorized by the USFS, BLM, NPS, and BIA. Other actions of concern include dredging and filling, mining, diking, and bank stabilization activities authorized or conducted by the USACE, habitat modifications authorized by the Federal Emergency Management Agency, and approval of water quality standards and pesticide labeling and use restrictions administered by the Environmental Protection Agency.

Private entities may also be affected by these proposed critical habitat designations if a Federal permit is required, if Federal funding is received, or the entity is involved in or receives benefits from a Federal project. For example, private entities may have special use permits to convey water or build access roads across Federal land; they may require Federal permits to construct irrigation withdrawal facilities, or build or repair docks; they may obtain water from Federally funded and operated irrigation projects; or

they may apply pesticides that are only available with Federal agency approval. These activities will need to be evaluated with respect to their potential to destroy or adversely modify critical habitat for lower Columbia River coho and Puget Sound steelhead. Changes to some activities, such as the operations of dams and dredging activities, may be necessary to minimize or avoid destruction or adverse modification of proposed critical habitat. Transportation and utilities sectors may need to modify the placement of culverts, bridges, and utility conveyances (e.g., water, sewer, and power lines) to avoid barriers to fish migration. Developments (e.g., marinas, residential, or industrial facilities) occurring in or near streams, estuaries, or marine waters designated as critical habitat that require Federal authorization or funding may need to be altered or built in a manner to ensure that critical habitat is not destroyed or adversely modified as a result of the construction or subsequent operation of the facility. Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to NMFS (see ADDRESSES and FOR FURTHER INFORMATION CONTACT).

#### Public Comments Solicited

We solicit comments or suggestions from the public, other concerned governments and agencies, the scientific community, industry, non-governmental organizations, or any other interested party concerning the proposed designations and exclusions as well as the documents supporting this rulemaking. We are particularly interested in comments and information in the following areas: (1) information describing the abundance, distribution, and habitat use of lower Columbia River coho and Puget Sound steelhead; (2) information on the identification, location, and the quality of

physical or biological features which may be essential to the conservation of the species; (3) information regarding potential benefits of designating any particular area as critical habitat, including information on the types of Federal actions that may affect the area's physical and biological features; (4) information regarding potential impacts of designating any particular area, including the types of Federal actions that may trigger an ESA section 7 consultation and the possible modifications that may be required of those activities; (5) information regarding the benefits of excluding a particular area from critical habitat, including areas covered by an existing HCP; (6) current or planned activities in the areas proposed as critical habitat and costs of potential modifications to those activities due to critical habitat designation; (7) whether specific unoccupied areas (e.g., stream reaches above Condit Dam on the White Salmon River, Washington) not presently proposed for designation are or may be essential to the conservation of these DPSs; and (8) any foreseeable economic, national security, or other relevant impact resulting from the proposed designations.

You may submit your comments and materials concerning this proposal by any one of several methods (see ADDRESSES). Copies of the proposed rule and supporting documentation can be found on the NMFS website <http://www.nwr.noaa.gov>. We will consider all comments pertaining to these designations received during the comment period in preparing the final rule. Accordingly, the final decision may differ from this proposed rule.

#### Public Hearings

Agency regulations at 50 CFR 424.16(c)(3) require the Secretary to promptly hold at least one public hearing if any person requests one within 45 days of publication of a

proposed rule to designate critical habitat. Such hearings provide the opportunity for interested individuals and parties to give comments, exchange information and opinions, and engage in a constructive dialogue concerning this proposed rule. We encourage the public's involvement in such ESA matters. Requests for a public hearing(s) must be made in writing (see ADDRESSES) by [insert date 45 days after date of publication in the FEDERAL REGISTER].

#### Information Quality Act and Peer Review

The data and analyses supporting this proposed action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (IQA) (Section 515 of Public Law 106–554). In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review pursuant to the IQA. The Bulletin was published in the Federal Register on January 14, 2005 (70 FR 2664). The Bulletin established minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation with regard to certain types of information disseminated by the Federal Government. The peer review requirements of the OMB Bulletin apply to influential or highly influential scientific information disseminated on or after June 16, 2005. Two documents supporting these critical habitat proposals are considered influential scientific information and subject to peer review. These documents are the draft Biological Report (NMFS, 2012a) and draft Economic Analysis (NMFS, 2012b). We will distribute these documents for independent peer review and will address any comments received in developing the final drafts of the two reports. Both documents are available on our

website at <http://www.nwr.noaa.gov>, on the Federal eRulemaking website at <http://www.regulations.gov>, or upon request (see ADDRESSES). We will announce the availability of comments received from peer reviewers and the public and make them available via our website as soon as practicable during or after the comment period but in advance of a final rule.

#### Classification

#### Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act of 1996), whenever an agency publishes a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis describing the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). We have prepared an initial regulatory flexibility analysis, which is part of the draft economic analysis (NMFS 2012b). This document is available upon request (see ADDRESSES), via our website at <http://nwr.noaa.gov>, or via the Federal eRulemaking website at <http://www.regulations.gov>. The results of the initial regulatory flexibility analysis are summarized below.

The impacts to small businesses were assessed for the following broad categories of activities: hydropower, development, in-stream work, water supply, Federal lands management, transportation, utilities, mining, and other activities (including water, sewer, and oil/gas pipeline construction). We used the size standards for small entities established by the Small Business Administration for each activity type. Of all of the potentially affected entities, 89 percent are classified as likely to be “small” under the

applicable SBA size standards. Total annualized impacts to small entities as a result of this rule are estimated to be \$209,000 (approximately 58.4 percent of total incremental impacts) if all habitat areas assessed for lower Columbia River coho were designated as critical habitat. Total annualized impacts to small entities are estimated to be \$298,000 (approximately 64.6 percent of total incremental impacts) if all habitat areas assessed for Puget Sound steelhead were designated as critical habitat.

We estimated the annualized costs associated with ESA section 7 consultations incurred per small business under two different scenarios. These scenarios are intended to provide a measure of uncertainty regarding the number of small entities that may be affected by the designations. Under Scenario 1, this analysis estimates the number of small entities located within areas assessed for proposed designation (approximately 5,381 for lower Columbia River coho, and 12,758 for Puget Sound steelhead), and assumes that incremental impacts are distributed evenly across all entities in each affected industry. Under this scenario, for lower Columbia River coho, a small entity may bear costs of between \$2 and \$3,430, representing between less than 0.01 and 0.11 percent of average annual revenues (depending on the industry). For Puget Sound steelhead, a small entity may bear costs of between less than \$1 and \$1,260, representing between less than 0.01 and 0.04 percent of average annual revenues (depending on the industry).

Under scenario 2, this analysis assumes costs of each anticipated future consultation will be borne by a distinct small business (approximately 55 entities for lower Columbia River coho, and 117 for Puget Sound steelhead). Under this scenario, in areas assessed for lower Columbia River coho critical habitat, each small entity may bear

costs of between \$1,150 and \$31,000, representing between <0.01 and 0.46 percent of average annual revenues, depending on the industry. In areas assessed for Puget Sound steelhead critical habitat, each small entity may bear costs of between \$510 and \$5,930, representing between <0.01 and 0.16 percent of average annual revenues, depending on the industry.

In accordance with the requirements of the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act of 1996) this analysis considered various alternatives to the critical habitat designations for these DPSs. The alternative of not designating critical habitat for these DPSs was considered and rejected, because such an approach does not meet the legal requirements of the ESA. We also examined and rejected an alternative in which all the potential critical habitat for these two DPSs is proposed for designation (i.e., no areas are excluded) because some of the areas considered to have a low conservation value also had relatively high economic impacts that might be mitigated by excluding those areas from designation. A third alternative we examined and rejected would have excluded all habitat areas with a low or medium conservation value. While this alternative furthers the goal of reducing economic impacts, it is not sensitive to the fact that for both of these DPSs, eliminating all habitat areas with low and medium conservation value is likely to significantly impede conservation. Moreover, for some habitat areas the incremental economic benefit from excluding that area is relatively small or zero. Therefore, after considering these alternatives in the context of the section 4(b)(2) process of weighing benefits of exclusion against benefits of designation, we determined that the current proposal for designating critical habitat (i.e., designating some but not all areas with low or medium conservation



value) provides an appropriate balance of conservation and economic mitigation and that excluding the areas identified in this proposed rulemaking would not result in extinction of the DPSs, as required by the ESA.

#### Executive Order 12866

This proposed rule has been determined to be not significant under Executive Order 12866.

#### Executive Order 13211

On May 18, 2001, the President issued an executive order on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking any action that promulgates or is expected to lead to the promulgation of a final rule or regulation that (1) is a significant regulatory action under Executive Order 12866 and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy.

We have considered the potential impacts of this action on the supply, distribution, or use of energy and find the designation of critical habitat will not have impacts that exceed the thresholds identified above (NMFS, 2012b).

#### Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act, NMFS makes the following findings:

(a) This proposed rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute or regulation that would impose an enforceable duty upon state, local, tribal governments, or the private sector and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.”

These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to state, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding” and the state, local, or tribal governments “lack authority” to adjust accordingly. (At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement.)

“Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance; or (ii) a duty arising from participation in a voluntary Federal program.” The designation of critical habitat does not impose a legally binding duty on non- Federal government entities or private parties. Under the ESA, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non- Federal entities which receive Federal funding, assistance, permits or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally

binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above to state governments.

(b) Due to the existing protection afforded to the proposed critical habitat from existing critical habitat for salmon and steelhead (70 FR 52630, September 2, 2005), Southern DPS of green sturgeon (74 FR 52300, October 9, 2009), bull trout (70 FR 56212, September 26, 2005), and the Southern DPS of Pacific eulachon (76 FR 65324, October 20, 2011), we do not anticipate that this proposed rule will significantly or uniquely affect small governments. As such, a Small Government Agency Plan is not required.

#### Takings

Under Executive Order 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with Executive Order 12630, this proposed rule does not have significant takings implications, and a takings implication assessment is not required. The designation of critical habitat affects only Federal agency actions. We do not expect the proposed critical habitat designations will impose additional burdens on land use or affect property values. Additionally, the proposed critical habitat designations do not preclude the development of Habitat Conservation

Plans and issuance of incidental take permits for non-Federal actions. Owners of areas included within the proposed critical habitat designations will continue to have the opportunity to use their property in ways consistent with the survival of listed salmon and steelhead.

#### Federalism

In accordance with Executive Order 13132, we determined that this proposed rule does not have significant Federalism effects and that a Federalism assessment is not required. In keeping with Department of Commerce policies, we request information from, and will coordinate development of these proposed critical habitat designations with, appropriate state resource agencies in Oregon and Washington. The proposed designations may have some benefit to state and local resource agencies in that the areas essential to the conservation of the species are more clearly defined, and the essential features of the habitat necessary for the survival of the subject DPSs are specifically identified. It may also assist local governments in long-range planning (rather than waiting for case-by-case ESA section 7 consultations to occur).

#### Government-to-Government Relationship With Tribes

Pursuant to Executive Order 13175 and Secretarial Order 3206, we contacted the affected Indian Tribes when considering the designation of critical habitat in an area that may impact tribal trust resources, tribally owned fee lands or the exercise of tribal rights. All of the responding tribes expressed concern about the intrusion into tribal sovereignty that critical habitat designation represents. These concerns are consistent with previous responses from tribes when we developed critical habitat designations for salmon and steelhead in 2005 (70 FR 52630, September 2, 2005). The Secretarial Order defines

Indian lands as “any lands title to which is either: (1) held in trust by the United States for the benefit of any Indian tribe or (2) held by an Indian Tribe or individual subject to restrictions by the United States against alienation.” Our conversations with the tribes indicate that they view the designation of Indian lands as an unwanted intrusion into tribal self-governance, compromising the government-to-government relationship that is essential to achieving our mutual goal of conserving threatened and endangered salmonids.

For the general reasons described in the Other Relevant Impacts - Impacts to Tribal Sovereignty and Self-Governance section above, the draft ESA 4(b)(2) analysis has led us to propose the exclusion of all Indian lands in our proposed designations for lower Columbia River coho and Puget Sound steelhead. Consistent with other proposed exclusions, any exclusion in the final rule will be made only after consideration of all comments received.

#### Civil Justice Reform

The Department of Commerce has determined that this proposed rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of Executive Order 12988. We are proposing to designate critical habitat in accordance with the provisions of the ESA. This proposed rule uses standard property descriptions and identifies the essential features within the designated areas to assist the public in understanding the habitat needs of lower Columbia River coho and Puget Sound steelhead.

#### Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This proposed rule does not contain new or revised information collection requirements for which Office of Management and Budget (OMB) approval is required under the Paperwork Reduction Act (PRA). This proposed rule will not impose recordkeeping or reporting requirements on state or local governments, individuals, businesses, or organizations. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

#### National Environmental Policy Act of 1969 (NEPA)

We have determined that an environmental analysis as provided for under NEPA is not required for critical habitat designations made pursuant to the ESA. See Douglas County v. Babbitt, 48 F.3d 1495 (9th Cir. 1995), cert. denied, 116 S.Ct. 698 (1996).

#### Coastal Zone Management Act

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1456) requires that all Federal activities that affect the land or water use or natural resource of the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. We have determined that these proposed designations of critical habitat are consistent to the maximum extent practicable with the enforceable policies of approved Coastal Zone Management Programs of Oregon and Washington. The determination will be submitted for review by the responsible agencies in the aforementioned states.

#### References Cited

A complete list of all references cited in this rulemaking can be found on our website at <http://www.nwr.noaa.gov/> and is available upon request from the NMFS office in Portland, Oregon (see ADDRESSES).

List of Subjects in 50 CFR Part 226

Endangered and threatened species.

Dated: January 3, 2012.

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Alan D. Risenhoover

Director, Office of Sustainable Fisheries, performing the functions and duties of the Deputy Assistant Administrator for Regulatory Programs,  
National Marine Fisheries Service.

For the reasons set out in the preamble, we propose to amend part 226, title 50 of the Code of Federal Regulations as set forth below:

PART 226–DESIGNATED CRITICAL HABITAT

1. The authority citation of part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

2. In § 226.212,

- (a) Revise the section heading and introductory text ;
- (b) Revise paragraph (a) introductory text. and add paragraphs (a)(14) and (a)(15);
- (c) Revise paragraph (c) introductory text;
- (d) Revise paragraphs (e)(9), (e)(23) and (e)(24) and add paragraph (e)(25);
- (e) Revise paragraph (f) introductory text;

- (f) Add paragraphs (f)(1), (f)(2), (f)(5) and (f)(6);
- (g) Redesignate paragraphs (g) and (h) as paragraphs (f)(3) and (f)(4);
- (h) Revise newly redesignated paragraphs (f)(3) and (f)(4) to read as follows;
- (i) Redesignate paragraphs (i) through (u) as paragraphs (g) through (s); and
- (j) Add paragraphs (t) and (u):

**The revisions and additions read as follows:**

§ 226.212 Critical habitat for 15 Distinct Population Segments (DPSs) of salmon and steelhead (Oncorhynchus spp.) in Washington, Oregon and Idaho.

Critical habitat is designated in the following states and counties for the following DPSs as described in paragraph (a) of this section, and as further described in paragraphs (b) through (g) of this section. The textual descriptions of critical habitat for each DPS are included in paragraphs (i) through (w) of this section, and these descriptions are the definitive source for determining the critical habitat boundaries. General location maps are provided at the end of each DPS description (paragraphs (i) through (w) of this section) and are provided for general guidance purposes only, and not as a definitive source for determining critical habitat boundaries.

(a) Critical habitat is designated for the following DPSs in the following states and counties:

DPS	State—Counties
* * *	* * *



(14) Lower Columbia River coho salmon.....	(i) <u>OR</u> —Clackamas, Clatsop, Columbia, Hood River, Marion, and Multnomah. (ii) <u>WA</u> —Clark, Cowlitz, Klickitat, Lewis, Pacific, Skamania, and Wahkiakum.
(15) Puget Sound steelhead.....	<u>WA</u> —Clallam, Jefferson, King, Kitsap, Mason, Pierce, Skagit, Snohomish, Thurston, and Whatcom.

\* \* \* \* \*

(c) Primary constituent elements. Within these areas, the primary constituent elements essential for the conservation of these DPSs are those sites and habitat components that support one or more life stages, including:

\* \* \* \* \*

(e) \* \* \*

(9) Fort Lewis (Army and Air Force);

\* \* \* \* \*

(23) Dabob Bay/Whitney Point naval restricted area;

(24) Port Townsend/Indian Island/Walan Point naval restricted area; and

(25) Naval Base Kitsap

\* \* \* \* \*

(f) Land covered by an approved Habitat Conservation Plan. Critical habitat does not include any areas subject to an approved incidental take permit issued by NMFS

under section 10(a)(1)(B) of the ESA. The specific sites addressed include those associated with the following Habitat Conservation Plans:

- (1) Washington Department of Natural Resources – West of Cascades
- (2) Washington State Forest Practices
- (3) Green Diamond Company
- (4) West Fork Timber Company
- (5) City of Kent
- (6) J.L. Storedahl and Sons

\* \* \* \* \*

(t) Lower Columbia River Coho Salmon (Oncorhynchus kisutch). Critical habitat is designated to include the areas defined in the following subbasins:

(1) Middle Columbia-Hood Subbasin 17070105—(i) East Fork Hood River Watershed 1707010506. Outlet(s) = Hood River (Lat 45.605237, Long -121.633264); upstream to

endpoint(s) in: Bear Creek (45.491952, -121.648262); Dog River (45.447412, -121.567406); East Fork Hood River (45.310783, -121.626954); East Fork Hood River (45.412671, -121.570369); Evans Creek (45.486998, -121.590438); Graham Creek (45.551655, -121.567021); Griswell Creek (45.522055, -121.577151); Pinnacle Creek (45.459186, -121.658854); Pocket Creek (45.302362, -121.597799); Tony Creek (45.540932, -121.644048); Yellowjacket Creek (45.502652, -121.561138).

(ii) West Fork Hood River Watershed 1707010507. Outlet(s) = West Fork Hood River (Lat 45.605237, Long -121.633264); upstream to endpoint(s) in: Elk Creek (45.439371, -121.79187); Green Point Creek (45.590219, -121.681893).

(iii) Hood River Watershed 1707010508. Outlet(s) = Hood River (Lat 45.712335, Long - 121.508062); upstream to endpoint(s) in: Lenz Creek (45.627282, -121.527217); Unnamed (45.695827, -121.499524); Hood River (45.605237, -121.633264); Neal Creek (45.589032, -121.495443); West Fork Neal Creek (45.589791, -121.50157); Whiskey Creek (45.682589, -121.507362).

(iv) White Salmon River Watershed 1707010509. Outlet(s) = White Salmon River (Lat 45.722453, Long -121.522507); upstream to endpoint(s) in: White Salmon River (45.767475, -121.538582).

(v) Little White Salmon River Watershed 1707010510. Outlet(s) = Little White Salmon River (Lat 45.709771, -121.648828); upstream to endpoint(s) in: Little White Salmon River (45.721722, -121.640905).

(vi) Wind River Watershed 1707010511. Outlet(s) = Wind River (Lat 45.708031, Long - 121.7937); upstream to endpoint(s) in: Unnamed (45.815611, -121.845378); Unnamed (45.8203, -121.812338); Unnamed (45.821678, -121.947378); Unnamed (45.842504, -121.919472); Unnamed (45.847958, -121.923983); Unnamed (45.863859, -121.977579); Unnamed (45.96647, -121.911828); Bear Creek (45.761807, -121.830558); Big Hollow Creek (45.939879, -122.003963); Cedar Creek (45.830782, -121.803419); Dry Creek (45.951945, -121.986573); Eightmile Creek (45.849795, -121.895036); Falls Creek (45.910426, -121.923791); Hollis Creek (45.844829, -121.93704); Little Wind River (45.764902, -121.743713); Martha Creek (45.789911, -121.936208); Mouse Creek (45.841299, -121.844253); Ninemile Creek (45.892264, -121.938276); Panther Creek (45.860314, -121.843418); Paradise Creek (45.960955, -121.9529); Tenmile Creek

(45.857983, -121.85914); Trapper Creek (45.905546, -122.03664); Trout Creek (45.801934, -121.932513); Wind River (45.97452, -121.90201).

(vii) Middle Columbia/Grays Creek Watershed 1707010512. Outlet(s) = Columbia River (Lat 45.704232, Long -121.799197); upstream to endpoint(s) in: Unnamed (45.709771, -121.648828); Unnamed (45.71305, -121.765469); Unnamed (45.717006, -121.775974); Unnamed (45.724676, -121.733359); Dog Creek (45.711575, -121.670928); Gorton Creek (45.691091, -121.773139); Columbia River (45.712335, -121.508062); Lindsey Creek (45.686538, -121.716427); Viento Creek (45.697116, -121.668995).

(viii) Middle Columbia/Eagle Creek Watershed 1707010513. Outlet(s) = Unnamed (Lat 45.644489, Long -121.940679); upstream to endpoint(s) in: Unnamed (45.665271, -121.8177); Unnamed (45.667271, -121.849896); Unnamed (45.668788, -121.845446); Unnamed (45.681125, -121.861863); Unnamed (45.710132, -121.845697); Camp Creek (45.667436, -121.817935); Carson Creek (45.715784, -121.820829); Columbia River (45.704232, -121.799197); Eagle Creek (45.636481, -121.918349); East Fork Herman Creek (45.653835, -121.814038); Herman Creek (45.65053, -121.819282); Kanaka Creek (45.703936, -121.886202); Nelson Creek (45.70486, -121.863199); Ruckel Creek (45.646027, -121.920243).

(2) Lower Columbia-Sandy Subbasin 17080001—(i) Salmon River Watershed 1708000101. Outlet(s) = Salmon River (Lat 45.376252, Long -122.031058); upstream to endpoint(s) in: Unnamed (45.294351, -121.93992); Unnamed (45.327567, -121.964685); Unnamed (45.333577, -121.954887); Unnamed (45.343325, -121.993355); Bighorn Creek (45.261413, -121.920687); Boulder Creek (45.345892, -122.022829); Cheeney Creek (45.298138, -121.966984); Copper Creek (45.250573, -121.906523); Salmon

River (45.250793, -121.903932); South Fork Salmon River (45.262376, -121.94569);  
Welches Creek (45.322357, -121.96209); Little Cheney Creek (45.315925, -121.957706).

(ii) Zigzag River Watershed 1708000102. Outlet(s) = Zigzag River (Lat 45.348502, Long -121.945268); upstream to endpoint(s) in: Unnamed (45.264488, -121.835176);  
Unnamed (45.309925, -121.867436); Little Zigzag Canyon (45.313577, -121.804646);  
Camp Creek (45.302508, -121.824858); Cool Creek (45.292765, -121.884534); Henry  
Creek (45.329747, -121.904756); Lady Creek (45.319762, -121.823709); Still Creek  
(45.266162, -121.82967); Wind Creek (45.298307, -121.856182); Zigzag River  
(45.31595, -121.804679).

(iii) Upper Sandy River Watershed 1708000103. Outlet(s) = Sandy River (Lat 45.348695, -121.945224); upstream to endpoint(s) in: Unnamed (45.375211, -121.831255); Unnamed (45.380971, -121.827671); Unnamed (45.38147, -121.902185);  
Unnamed (45.394711, -121.794578); Unnamed (45.399767, -121.901436); Cast Creek  
(45.380693, -121.858892); Clear Creek (45.399405, -121.89475); Clear Fork (45.396485, -121.858012); Little Clear Creek (45.377979, -121.915785); Lost Creek (45.372028, -121.818608); Minikahda Creek (45.368674, -121.940028); Sandy River (45.388349, -121.842458); Short Creek (45.376861, -121.863405).

(iv) Middle Sandy River Watershed 1708000104. Outlet(s) = Sandy River (Lat 45.446429, Long -122.248369); upstream to endpoint(s) in: Unnamed (45.37949, -122.03096); Unnamed (45.386346, -122.036698); Alder Creek (45.376772, -122.100846); Bear Creek (45.336648, -121.927798); Cedar Creek (45.404272, -122.252578); Hackett Creek (45.352288, -121.951609); North Boulder Creek

(45.382046, -122.017926); Whisky Creek (45.377566, -122.128088); Wildcat Creek (45.370157, -122.077485).

(v) Bull Run River Watershed 1708000105. Outlet(s) = Bull Run River (Lat 45.445672, -122.247943); upstream to endpoint(s) in: Bull Run River (45.431922, -122.19391); Little Sandy River (45.408124, -122.066052).

(vi) Washougal River Watershed 1708000106. Outlet(s) = Washougal River (Lat 45.581011, Long -122.408885); upstream to endpoint(s) in: Unnamed (45.58717, -122.413316); Unnamed (45.600016, -122.332175); Unnamed (45.611824, -122.242999); Unnamed (45.612809, -122.324998); Unnamed (45.620381, -122.345921); Unnamed (45.626874, -122.34346); Unnamed (45.627736, -122.256085); Unnamed (45.629474, -122.247482); Unnamed (45.638035, -122.292731); Unnamed (45.647483, -122.367738); Unnamed (45.648358, -122.334455); Unnamed (45.650547, -122.157413); Unnamed (45.653255, -122.275218); Unnamed (45.657929, -122.220622); Unnamed (45.659093, -122.207653); Unnamed (45.6692, -122.156539); Unnamed (45.670112, -122.34117); Unnamed (45.672008, -122.173594); Unnamed (45.674178, -122.299555); Unnamed (45.683465, -122.334825); Unnamed (45.696755, -122.315224); Unnamed (45.700417, -122.32238); Unnamed (45.708896, -122.266302); Unnamed (45.708947, -122.252235); Unnamed (45.720695, -122.249333); Unnamed (45.729294, -122.195616); Cougar Creek (45.651259, -122.268846); Dougan Creek (45.67684, -122.153333); East Fork Little Washougal River (45.672014, -122.283888); Jackson Creek (45.675271, -122.254193); Jones Creek (45.689112, -122.291063); Lacamas Creek (45.597039, -122.394477); Texas Creek (45.689165, -122.187421); Washougal River (45.67269, -122.153567); West Fork Washougal River (45.733609, -122.214819); Wildboy Creek (45.671, -122.218436);

Winkler Creek (45.632735, -122.261321); Hagen Creek (45.706875, -122.25864); Little Washougal River (45.676574, -122.342287); Little Washougal River (45.653083, -122.347546); Winkler Creek (45.631081, -122.26165).

(vii) Columbia Gorge Tributaries Watershed 1708000107. Outlet(s) = Columbia River (Lat 45.573261, Long -122.397377); upstream to endpoint(s) in: Unnamed (45.548138, -122.351565); Unnamed (45.567076, -122.304405); Unnamed (45.588566, -122.294521); Unnamed (45.590912, -122.2823); Unnamed (45.593653, -122.144297); Unnamed (45.596322, -122.298126); Unnamed (45.602186, -122.045501); Unnamed (45.603278, -122.117957); Unnamed (45.60427, -122.114465); Unnamed (45.604686, -122.111908); Unnamed (45.608658, -122.034755); Unnamed (45.618526, -122.046564); Unnamed (45.627848, -122.059877); Unnamed (45.644489, -121.940679); Unnamed (45.648055, -121.973672); Unnamed (45.648286, -121.937896); Unnamed (45.651152, -121.948423); Unnamed (45.663009, -121.945288); Unnamed (45.668112, -121.944275); Unnamed (45.705738, -122.030562); Unnamed (45.706583, -122.030264); Unnamed (45.712761, -122.031391); Bridal Veil Creek (45.554125, -122.180231); Campen Creek (45.588421, -122.32304); Coopey Creek (45.56249, -122.165304); Duncan Creek (45.668084, -122.087311); Gibbons Creek (45.578553, -122.280402); Greenleaf Creek (45.680477, -121.961898); Hamilton Creek (45.724649, -122.025155); Hardy Creek (45.637053, -122.006906); Horsetail Creek (45.588381, -122.068121); Indian Mary Creek (45.626983, -122.08352); Latourell Creek (45.54047, -122.218884); Lawton Creek (45.57449, -122.251177); Little Creek (45.644317, -122.037293); McCord Creek (45.611378, -121.994145); Moffett Creek (45.618491, -121.967182); Multnomah Creek (45.575938, -122.115489); Oneonta Creek (45.582044, -122.072688); Tanner Creek (45.629297, -

121.954011); Tumalt Creek (45.609963, -122.029615); Wahkeena Creek (45.573123, -122.126812); Walton Creek (45.575513, -122.26303); Woodward Creek (45.632266, -122.044788); Young Creek (45.546713, -122.198337); Hardy Creek (45.633735, -121.99603).

(viii) Lower Sandy River Watershed 1708000108. Outlet(s) = Sandy River (Lat 45.574301, Long -122.380188); upstream to endpoint(s) in: Unnamed (45.553991, -122.377876); Beaver Creek (45.495821, -122.365511); Big Creek (45.506685, -122.297833); Buck Creek (45.497012, -122.277464); Cat Creek (45.489237, -122.238503); Gordon Creek (45.502328, -122.181652); Kelly Creek (45.513162, -122.396503); Middle Fork Beaver Creek (45.488652, -122.352533); Sandy River (45.446429, -122.248369); Trout Creek (45.481334, -122.27692).

(ix) Salmon Creek Watershed 1708000109. Outlet(s) = Unnamed (Lat 45.608827, Long -122.628396); Unnamed (45.782133, -122.770935); Unnamed (45.79137, -122.779096); Lake River (45.842318, -122.780058); Unnamed (45.583634, -122.493678); Unnamed (45.725544, -122.762187); Unnamed (45.708956, -122.765945); upstream to endpoint(s) in: Unnamed (45.597056, -122.48085); Unnamed (45.618497, -122.625455); Unnamed (45.692522, -122.750865); Unnamed (45.705359, -122.654729); Unnamed (45.736541, -122.738658); Unnamed (45.740616, -122.457587); Unnamed (45.741057, -122.541219); Unnamed (45.745405, -122.701278); Unnamed (45.750243, -122.641509); Unnamed (45.751664, -122.635603); Unnamed (45.758152, -122.697981); Unnamed (45.759293, -122.753826); Unnamed (45.760094, -122.420422); Unnamed (45.760678, -122.510984); Unnamed (45.763086, -122.392563); Unnamed (45.766128, -122.402833); Unnamed (45.768661, -122.410137); Unnamed (45.768856, -122.458956); Unnamed (45.771241, -



122.481058); Unnamed (45.77272, -122.42969); Unnamed (45.779683, -122.608053); Unnamed (45.783976, -122.432545); Unnamed (45.785031, -122.709594); Unnamed (45.788669, -122.739027); Unnamed (45.796251, -122.438508); Unnamed (45.801421, -122.517285); Unnamed (45.807105, -122.454757); Unnamed (45.807885, -122.425007); Unnamed (45.808519, -122.754502); Unnamed (45.813822, -122.449343); Unnamed (45.817459, -122.771105); Unnamed (45.827212, -122.764666); Burnt Bridge Creek (45.660818, -122.511162); Cold Canyon (45.663287, -122.66699); Cougar Canyon Creek (45.707212, -122.682567); Curtin Creek (45.684387, -122.586094); Flume Creek (45.779893, -122.71596); Lalonde Creek (45.707849, -122.642314); Little Salmon Creek (45.784979, -122.421225); Mill Creek (45.77898, -122.566195); Morgan Creek (45.751434, -122.446616); Mud Creek (45.731816, -122.478143); Packard Creek (45.757922, -122.699539); Rock Creek (45.815043, -122.456123); Salmon Creek (45.757766, -122.424507); Weaver Creek (45.793553, -122.495211); Whipple Creek (45.734817, -122.657695).

(3) Lewis Subbasin 17080002—(i) Upper Lewis River Watershed 1708000201. Outlet(s) = Lewis River (Lat 46.069463, Long -122.006838); upstream to endpoint(s) in: Big Creek (46.094659, -121.913097); Chickoon Creek (46.148528, -121.878749); Crab Creek (46.141771, -121.890849); Curly Creek (46.057396, -121.970510); Cussed Hollow (46.148088, -121.904757); Lewis River (46.154732, -121.880642); Little Creek (46.071497, -121.911930); Pepper Creek (46.078061, -121.983936); Rush Creek (46.050925, -121.905817); Spencer Creek (46.143417, -121.910603).

(ii) Muddy River Watershed 1708000202. Outlet(s) = Muddy River (Lat 46.069463, Long -122.006838); upstream to endpoint(s) in: Clear Creek (46.210439, -121.951602);

Clearwater Creek (46.208811, -122.016938); Muddy River (46.180853, -122.070616);  
Smith Creek (46.229009, -122.091210).

(iii) Swift Reservoir Watershed 1708000203. Outlet(s) = Lewis River (46.061988, -  
122.192687); upstream to endpoint(s) in: Unnamed (46.067280, -122.031517); Unnamed  
(46.030884, -122.025805); Unnamed (46.021441, -122.094836); Unnamed (46.076975, -  
122.134548); Drift Creek (45.992711, -122.064320); Lewis River (46.069463, -  
122.006838); Marble Creek (46.075248, -122.138077); Pine Creek (46.091385, -  
122.040834); Range Creek (46.028641, -122.121759); Swift Creek (46.090717, -  
122.205248).

(iv) Yale Reservoir Watershed 1708000204. Outlet(s) = Lewis River (Lat 45.966180, -  
Long 122.334825); upstream to endpoint(s) in: Dog Creek (46.061456, -122.317143);  
Cougar Creek (46.071149, -122.269881); Lewis River (46.061988, -122.192687); Ole  
Creek (46.049968, -122.239259); Panamaker Creek (46.076309, -122.298414); Rain  
Creek (46.041972, -122.204391).

(v) East Fork Lewis River Watershed 1708000205. Outlet(s) = Gee Creek (Lat  
45.846474, Long -122.784009); East Fork Lewis River (45.865974, -122.720015); ;  
upstream to endpoint(s) in: Unnamed (45.780025, -122.60805); Unnamed (45.794783, -  
122.698153); Unnamed (45.801134, -122.682844); Unnamed (45.804692, -122.580745);  
Unnamed (45.807413, -122.629756); Unnamed (45.814729, -122.56657); Unnamed  
(45.816914, -122.575875); Unnamed (45.822904, -122.708092); Unnamed (45.823983, -  
122.639331); Unnamed (45.828994, -122.605197); Unnamed (45.835126, -122.485374);  
Unnamed (45.836667, -122.650975); Unnamed (45.837829, -122.469846); Unnamed  
(45.846989, -122.749763); Unnamed (45.847364, -122.649785); Unnamed (45.848031, -

122.441525); Unnamed (45.849976, -122.524001); Unnamed (45.853522, -122.598543); Unnamed (45.855146, -122.593372); Unnamed (45.859839, -122.612419); Unnamed (45.861417, -122.70149); Unnamed (45.866041, -122.5784); Unnamed (45.866516, -122.575586); Unnamed (45.867718, -122.647281); Unnamed (45.869512, -122.678967); Unnamed (45.872474, -122.647396); Unnamed (45.875583, -122.487609); Unnamed (45.881115, -122.478516); Unnamed (45.905677, -122.519797); Allen Creek (45.827926, -122.698134); Basket Creek (45.832585, -122.459163); Brezee Creek (45.880461, -122.655871); East Fork Lewis River (45.839345, -122.447538); Gee Creek (45.791622, -122.674464); Jenny Creek (45.870366, -122.700692); Lockwood Creek (45.8722, -122.612928); Mason Creek (45.865932, -122.544237); McCormick Creek (45.851953, -122.691964); Riley Creek (45.872133, -122.62657); Unnamed Creek (45.843693, -122.648975).

(vi) Lower Lewis River Watershed 1708000206. Outlet(s) = Lewis River (Lat 45.855546, Long -122.775762); upstream to endpoint(s) in: Unnamed (45.870633, -122.756138); Unnamed (45.88666, -122.723102); Unnamed (45.892632, -122.422093); Unnamed (45.893766, -122.438283); Unnamed (45.901311, -122.727541); Unnamed (45.919994, -122.535139); Unnamed (45.920149, -122.456867); Unnamed (45.920747, -122.693543); Unnamed (45.923838, -122.424899); Unnamed (45.924295, -122.37431); Unnamed (45.928026, -122.689314); Unnamed (45.929363, -122.504918); Unnamed (45.939172, -122.41088); Unnamed (45.941429, -122.704591); Unnamed (45.942762, -122.671288); Unnamed (45.943605, -122.620229); Unnamed (45.944513, -122.644954); Unnamed (45.947599, -122.643073); Bitter Creek (45.913105, -122.460482); Brush Creek (45.927783, -122.468661); Cedar Creek (45.906562, -122.381815); Chelatchie Creek

(45.935564, -122.379567); Colvin Creek (45.939847, -122.609332); Houghton Creek (45.951179, -122.634346); John Creek (45.943278, -122.477146); Johnson Creek (45.953443, -122.61949); Lewis River (45.966180, -122.334825); North Fork Chelatchie Creek (45.945494, -122.393811); Pup Creek (45.948425, -122.525655); Robinson Creek (45.936812, -122.725723); Ross Creek (45.953911, -122.706047); Staples Creek (45.942126, -122.667681).

(4) Lower Columbia-Clatskanie Subbasin 17080003—(i) Kalama River Watershed 1708000301. Outlet(s) = Burris Creek (Lat 45.892513, Long -122.790279); Bybee Creek (45.966376, -122.816532); Kalama River (46.03393, -122.870595); Mill Creek (45.95816, -122.803634); Schoolhouse Creek (45.978378, -122.829247); Unnamed (45.999928, -122.848159); upstream to endpoint(s) in: Unnamed (45.903312, -122.780386); Unnamed (45.934119, -122.781977); Unnamed (45.977147, -122.825526); Unnamed (45.993614, -122.813527); Unnamed (46.043843, -122.856105); Burke Creek (45.94516, -122.775084); Burke Slough (45.924545, -122.797017); Burris Creek (45.932376, -122.743342); Bybee Creek (45.969366, -122.814717); Cedar Creek (46.03313, -122.812264); Hatchery Creek (46.049047, -122.801448); Indian Creek (46.049668, -122.752333); Indian Creek (46.0452, -122.752907); Kalama River (46.025868, -122.739474); Mill Creek (45.961948, -122.795944); Schoolhouse Creek (45.981238, -122.825927); Spencer Creek (46.025203, -122.829696).

(ii) Beaver Creek/Columbia River Watershed 1708000302. Outlet(s) = Beaver Slough (Lat 46.121253, Long -123.22089); Fox Creek (46.092512, -122.938467); Goble Creek (46.020615, -122.876532); Green Creek (46.166661, -123.099119); Tide Creek (45.994307, -122.866712); upstream to endpoint(s) in: Unnamed (45.914995, -

122.870367); Unnamed (45.985132, -122.928842); Unnamed (46.0165, -122.963794); Unnamed (46.019529, -122.944997); Beaver Creek (46.104384, -123.124089); Fox Creek (46.069709, -122.937725); Goble Creek (46.006921, -122.989536); Green Creek (46.143721, -123.074477); Merrill Creek (45.908708, -122.887674); North Fork Stewart Creek (46.134963, -123.142788); South Fork Goble Creek (45.967146, -122.912205); Stewart Creek (46.121924, -123.134473); Tide Creek (45.998871, -123.005909).

(iii) Clatskanie River Watershed 1708000303. Outlet(s) = Beaver Slough (Lat 46.139926, Long -123.230807); upstream to endpoint(s) in: Unnamed (45.871279, -123.016852); Unnamed (46.057, -123.256303); Beaver Slough (46.121253, -123.22089); Carcus Creek (45.988589, -123.087952); Clatskanie River (45.878919, -122.9959); Conyers Creek (46.056042, -123.241614); Dribble Creek (45.904283, -123.028122); Fall Creek (46.10887, -123.212892); Keystone Creek (46.075658, -123.145555); Little Clatskanie River (45.914012, -122.995923); Merrill Creek (46.081981, -123.187026); Miller Creek (46.043933, -123.146664); North Fork Clatskanie River (46.028796, -123.052308); Page Creek (46.04337, -123.126689); Perkins Creek (46.045692, -123.202675).

(iv) Germany/Abernathy Watershed 1708000304. Outlet(s) = Abernathy Creek (46.190946, -123.16764); Coal Creek Slough (46.189618, -123.116548); Germany Creek (46.190472, -123.124221); Mill Creek (Lat 46.188644, Long -123.175717); upstream to endpoint(s) in: Unnamed (46.174387, -123.284405); Unnamed (46.177806, -123.244713); Unnamed (46.179048, -123.28534); Unnamed (46.179783, -123.014957); Unnamed (46.199235, -123.017367); Unnamed (46.209772, -123.250435); Unnamed (46.210569, -123.02174); Unnamed (46.2212, -123.233862); Unnamed (46.230005, -123.243579); Unnamed (46.23735, -123.217724); Unnamed (46.257704, -123.211771);

Unnamed (46.260394, -123.156937); Unnamed (46.282123, -123.215419); Unnamed (46.28956, -123.229955); Unnamed (46.302937, -123.18012); Unnamed (46.30502, -123.175317); Unnamed (46.313744, -123.186815); Unnamed (46.315329, -123.111068); Unnamed (46.318441, -123.123571); Unnamed (46.329631, -123.132487); Abernathy Creek (46.298183, -123.20799); Cameron Creek (46.266183, -123.196747); Coal Creek (46.214039, -123.020114); Erick Creek (46.283486, -123.165659); Germany Creek (46.323938, -123.150029); Harmony Creek (46.191588, -123.045625); Hunter Creek (46.200371, -123.277768); Midway Creek (46.280132, -123.179387); North Fork Mill Creek (46.237142, -123.227829); Ordway Creek (46.312588, -123.1944); Slide Creek (46.251167, -123.180153); South Fork Mill Creek (46.184454, -123.282779); Spruce Creek (46.19379, -123.270758); Wiest Creek (46.27626, -123.159368).

(v) Skamokawa/Elochoman Watershed 1708000305. Outlet(s) = Birnie Creek (Lat 46.200249, Long -123.388149); Elochoman River (46.22667, -123.400822); Jim Crow Creek (46.266028, -123.552297); Skamokawa Creek (46.268566, -123.45637); upstream to endpoint(s) in: Unnamed (46.225162, -123.303945); Unnamed (46.242407, -123.369715); Unnamed (46.264248, -123.311602); Unnamed (46.268968, -123.328113); Unnamed (46.27795, -123.384622); Unnamed (46.281109, -123.369818); Unnamed (46.294907, -123.320218); Unnamed (46.299508, -123.553063); Unnamed (46.30403, -123.499255); Unnamed (46.30564, -123.54826); Unnamed (46.320411, -123.244937); Unnamed (46.320842, -123.35815); Unnamed (46.325433, -123.281587); Unnamed (46.328108, -123.296011); Unnamed (46.33764, -123.44219); Unnamed (46.337892, -123.462614); Unnamed (46.34415, -123.256674); Unnamed (46.347782, -123.392349); Unnamed (46.349787, -123.211987); Unnamed (46.351596, -123.313042); Unnamed

(46.35173, -123.19359); Unnamed (46.360802, -123.261039); Unnamed (46.364365, -123.276383); Unnamed (46.368463, -123.242642); Unnamed (46.377205, -123.262108); Unnamed (46.382024, -123.242299); Unnamed (46.386679, -123.223722); Unnamed (46.303663, -123.365059); Unnamed (46.311328, -123.478976); Unnamed (46.306534, -123.546046); Beaver Creek (46.216566, -123.297152); Bell Canyon Creek (46.288173, -123.405772); Birnie Creek (46.204016, -123.384532); Cadman Creek (46.302299, -123.508597); Clear Creek (46.260761, -123.300874); Duck Creek (46.265653, -123.337856); East Fork Elochoman River (46.378345, -123.193512); Falk Creek (46.321532, -123.381397); Fink Creek (46.276734, -123.570228); Jim Crow Creek (46.312074, -123.539923); Kelly Creek (46.32257, -123.48111); Left Fork Skamokawa Creek (46.339453, -123.470344); Longtain Creek (46.25861, -123.369188); McDonald Creek (46.346651, -123.382328); Nelson Creek (46.257717, -123.35252); North Fork Elochoman River (46.375393, -123.284959); Otter Creek (46.388034, -123.217495); Pollard Creek (46.307613, -123.412558); Quarry Creek (46.337806, -123.42712); Risk Creek (46.25136, -123.399855); Rock Creek (46.277795, -123.275871); Standard Creek (46.333628, -123.357041); West Fork Elochoman River (46.351711, -123.329823); West Fork Skamokawa Creek (46.327805, -123.498954); West Valley Creek (46.291358, -123.51591); Wilson Creek (46.31583, -123.328008); Unnamed Creek (46.306534, -123.546046); Unnamed Creek (46.311328, -123.478976); Unnamed Creek (46.386679, -123.223722); Unnamed Creek (46.303663, -123.365059).

(vi) Plympton Creek Watershed 1708000306. Outlet(s) = Hunt Creek (Lat 46.202277, Long -123.445724); Westport Slough (46.143868, -123.383472); upstream to endpoint(s) in: Eilertsen Creek (46.099706, -123.328684); Graham Creek (46.09157, -123.277339);

Hunt Creek (46.120882, -123.428478); Ok Creek (46.099703, -123.321777); Olsen Creek (46.101357, -123.360299); Plympton Creek (46.127423, -123.391111); Ross Creek (46.108505, -123.368667); Tandy Creek (46.085085, -123.29629); West Creek (46.121298, -123.373425); Westport Slough (46.124151, -123.245135).

(5) Upper Cowlitz Subbasin 17080004—(i) Headwaters Cowlitz River Watershed 1708000401. Outlet(s) = Cowlitz River (Lat 46.657731, Long -121.604374); upstream to endpoint(s) in: Unnamed (46.675388, -121.580086); Clear Fork Cowlitz River (46.684326, -121.568004); Muddy Fork Cowlitz River (46.697086, -121.618719); Ohanapecosh River (46.690309, -121.582129); Purcell Creek (46.671171, -121.587667).  
(ii) Upper Cowlitz River Watershed 1708000402. Outlet(s) = Cowlitz River (46.576161, -121.706256); Johnson Creek (Lat 46.575836, Long -121.705564); upstream to endpoint(s) in: Unnamed (46.62375, -121.671832); Unnamed (46.641142, -121.654691); Unnamed (46.654671, -121.631508); Unnamed (46.692847, -121.803752); Butter Creek (46.646075, -121.675424); Coal Creek (46.643541, -121.611604); Cowlitz River (46.657731, -121.604374); Hall Creek (46.613874, -121.660242); Hinkle Tinkle Creek (46.653644, -121.641874); Johnson Creek (46.555366, -121.639734); Lake Creek (46.622383, -121.610363); Skate Creek (46.684892, -121.806283).

(iii) Cowlitz Valley Frontal Watershed 1708000403. Outlet(s) = Cowlitz River (Lat 46.476278, Long -122.096306); upstream to endpoint(s) in: Unnamed (46.489922, -122.083268); Unnamed (46.518735, -121.858756); Burton Creek (46.542568, -121.752074); Cowlitz River (46.576161, -121.706256); Cunningham Creek (46.512691, -121.844636); Davis Creek (46.540691, -121.809594); Dry Creek (46.560084, -121.705732); Garrett Creek (46.523043, -121.773614); Hampton Creek (46.537971, -



121.939923); Hopkin Creek (46.537673, -121.840214); Johnson Creek (Lat 46.575836, Long -121.705564); Kilborn Creek (46.507622, -121.801739); Kiona Creek (46.564304, -122.049702); Miller Creek (46.539348, -121.960377); Oliver Creek (46.545728, -121.99579); Peters Creek (46.543267, -121.982782); Schooley Creek (46.500722, -121.964414); Sethe Creek (46.534578, -121.867518); Siler Creek (46.492992, -121.911187); Silver Creek (46.55632, -121.91673); Smith Creek (46.561932, -121.693911); Surrey Creek (46.543475, -121.888707); Willame Creek (46.580526, -121.733077).

(iv) Upper Cispus River Watershed 1708000404. Outlet(s) = Cispus River (Lat 46.443752, Long -121.798269); upstream to endpoint(s) in: Cispus River (46.344891, -121.68424); East Canyon Creek (46.347337, -121.703867); North Fork Cispus River (46.435538, -121.657768); Twin Creek (46.374048, -121.728185).

(v) Lower Cispus River Watershed 1708000405. Outlet(s) = Cispus River (Lat 46.476761, Long -122.095709); upstream to endpoint(s) in: Unnamed (46.430554, -121.825682); Unnamed (46.455387, -121.954511); Unnamed (46.465418, -121.958732); Ames Creek (46.466423, -121.918257); Camp Creek (46.450675, -121.831242); Cispus River (Lat 46.443752, Long -121.798269); Copper Canyon Creek (46.467296, -122.082101); Covell Creek (46.431961, -121.851825); Crystal Creek (46.437145, -122.018844); Dry Creek (46.452466, -121.852225); Greenhorn Creek (46.421576, -121.905397); Iron Creek (46.38938, -121.971317); McCoy Creek (46.38901, -121.82019); Quartz Creek (46.434561, -122.05107); Woods Creek (46.475527, -121.949635); Yellowjacket Creek (46.386924, -121.834674).

(6) Cowlitz Subbasin 17080005—(i) Tilton River Watershed 1708000501. Outlet(s) = Tilton River (Lat 46.543356, Long -122.533164); upstream to endpoint(s) in: Unnamed (46.588777, -122.17989); Coal Creek (46.573383, -122.243464); Connelly Creek (46.603724, -122.311695); Coon Creek (46.61661, -122.284513); Eagle Creek (46.653164, -122.259058); East Fork Tilton River (46.594049, -122.170519); Jesse Creek (46.644446, -122.421704); Johnson Creek (46.531381, -122.237744); Little Creek (46.666231, -122.404381); Minnie Creek (46.539791, -122.234089); Nineteen Creek (46.599433, -122.22251); Otter Creek (46.62162, -122.401512); Rockies Creek (46.643019, -122.39823); Snow Creek (46.620326, -122.266924); South Fork Tilton Creek (46.563022, -122.1572); Tilton River (46.624549, -122.215133); Trout Creek (46.65834, -122.25936); Wallanding Creek (46.622603, -122.368924); West Fork Tilton River (46.658406, -122.308887); Winnie Creek (46.657038, -122.422335).

(ii) Riffe Reservoir Watershed 1708000502. Outlet(s) = Cowlitz River (Lat 46.5031, Long -122.588332); upstream to endpoint(s) in: Cowlitz River (46.476278, -122.096306); Winston Creek (46.459003, -122.370859).

(iii) Jackson Prairie Watershed 1708000503. Outlet(s) = Cowlitz River (Lat 46.367511, Long -122.934945); upstream to endpoint(s) in: Unnamed (46.383522, -122.679974); Unnamed (46.383941, -122.725937); Unnamed (46.385081, -122.705907); Unnamed (46.387856, -122.695831); Unnamed (46.39224, -122.75946); Unnamed (46.399666, -122.898638); Unnamed (46.400754, -122.733303); Unnamed (46.409488, -122.589866); Unnamed (46.410097, -122.680278); Unnamed (46.410422, -122.708726); Unnamed (46.411433, -122.756574); Unnamed (46.413363, -122.783988); Unnamed (46.417067, -122.637699); Unnamed (46.424466, -122.818117); Unnamed (46.427206, -122.613403);

Unnamed (46.428381, -122.643499); Unnamed (46.429253, -122.83625); Unnamed  
 (46.431112, -122.808741); Unnamed (46.440469, -122.519079); Unnamed (46.445258, -  
 122.867273); Unnamed (46.449715, -122.529087); Unnamed (46.450991, -122.871663);  
 Unnamed (46.472774, -122.686245); Unnamed (46.488493, -122.807753); Unnamed  
 (46.517532, -122.654378); Unnamed (46.5309, -122.820885); Unnamed (46.533357, -  
 122.758003); Unnamed (46.542935, -122.748007); Bear Creek (46.463967, -  
 122.913037); Blue Creek (46.488339, -122.726491); Brights Creek (46.496407, -  
 122.605179); Cedar Creek (46.420442, -122.725311); Coon Creek (46.445182, -  
 122.895851); Cougar Creek (46.393389, -122.795962); Cowlitz River (46.5031, -  
 122.588332); Foster Creek (46.40711, -122.890926); Hopkey Creek (46.459049, -  
 122.554437); Jones Creek (46.518881, -122.675281); Lacamas Creek (46.556204, -  
 122.688969); Little Salmon Creek (46.439872, -122.747395); Mill Creek (46.517371, -  
 122.622126); Mill Creek (46.502438, -122.803167); Otter Creek (46.479854, -  
 122.700841); Pin Creek (46.411782, -122.832479); Rapid Creek (46.432098, -  
 122.547553); Skook Creek (46.474731, -122.757751); Unnamed Creek (46.515124, -  
 122.681226).

(iv) North Fork Toutle River Watershed 1708000504. Outlet(s) = North Fork Toutle  
 River (Lat 46.371819, Long -122.585848); upstream to endpoint(s) in: Unnamed  
 (46.292893, -122.508359); Unnamed (46.294391, -122.526416); Unnamed (46.317597, -  
 122.321791); Unnamed (46.321385, -122.488684); Unnamed (46.331761, -122.316562);  
 Bear Creek (46.309744, -122.430749); Hoffstadt Creek (46.319718, -122.325454).

(v) Green River Watershed 1708000505. Outlet(s) = North Fork Toutle River (Lat  
 46.366681, Long -122.587092); upstream to endpoint(s) in: Unnamed (46.332935, -

122.298073); Unnamed (46.33485, -122.279213); Unnamed (46.355641, -122.205783); Unnamed (46.359811, -122.326801); Unnamed (46.373265, -122.389499); Unnamed (46.38427, -122.434721); Unnamed (46.387374, -122.488301); Unnamed (46.402102, -122.555537); Unnamed (46.40583, -122.542922); Unnamed (46.408718, -122.507384); Unnamed (46.410468, -122.431267); Unnamed (46.412392, -122.451557); Unnamed (46.416538, -122.283286); Unnamed (46.42, -122.292272); Unnamed (46.422599, -122.304017); Unnamed (46.428205, -122.267496); Beaver Creek (46.405735, -122.568826); Cascade Creek (46.417916, -122.331675); Devils Creek (46.401481, -122.409722); Elk Creek (46.41719, -122.250256); Green River (46.394118, -122.205161); Jim Creek (46.388361, -122.526853); Miners Creek (46.349143, -122.194242); Shultz Creek (46.344058, -122.275039); Tradedollar Creek (46.376142, -122.23987).

(vi) South Fork Toutle River Watershed 1708000506. Outlet(s) = Toutle River (Lat 46.329223, Long -122.725131); upstream to endpoint(s) in: Unnamed (46.185704, -122.299471); Unnamed (46.186193, -122.40715); Unnamed (46.188524, -122.445753); Unnamed (46.199665, -122.471338); Unnamed (46.201636, -122.296552); Unnamed (46.206594, -122.331284); Unnamed (46.21036, -122.431482); Unnamed (46.21081, -122.427763); Unnamed (46.210915, -122.428229); Unnamed (46.211429, -122.279573); Unnamed (46.215533, -122.347972); Unnamed (46.223287, -122.327701); Unnamed (46.223773, -122.524201); Unnamed (46.226916, -122.337898); Unnamed (46.227233, -122.373391); Unnamed (46.238958, -122.490827); Unnamed (46.243346, -122.38038); Unnamed (46.245202, -122.629903); Unnamed (46.258398, -122.534433); Unnamed (46.260587, -122.550523); Unnamed (46.261618, -122.571707); Unnamed (46.268347, -

122.577391); Unnamed (46.287125, -122.685581); Unnamed (46.292576, -122.659948);  
Unnamed (46.295532, -122.596926); Unnamed (46.296678, -122.585207); Unnamed  
(46.297388, -122.614534); Unnamed (46.310391, -122.606122); Unnamed (46.311754, -  
122.626346); Unnamed (46.312178, -122.704274); Unnamed (46.321553, -122.649148);  
Bear Creek (46.187484, -122.431406); Big Wolf Creek (46.225469, -122.567295);  
Brownell Creek (46.280407, -122.649708); Disappointment Creek (46.213614, -  
122.309153); Eighteen Creek (46.244881, -122.600184); Harrington Creek (46.247692, -  
122.419362); Johnson Creek (46.306181, -122.579585); Sheep Canyon (46.206343, -  
122.268258); South Fork Toutle River (46.209387, -122.263037); Studebaker Creek  
(46.28238, -122.681733); Thirteen Creek (46.237634, -122.624229); Trouble Creek  
(46.182362, -122.387761); Twenty Creek (46.232994, -122.5836); North Fork Toutle  
River (46.328728, -122.722386); Whitten Creek (46.203701, -122.502013).

(vii) East Willapa Watershed 1708000507. Outlet(s) = Cowlitz River (46.265795, -  
122.915793); upstream to endpoint(s) in: Unnamed (46.241179, -122.990022); Unnamed  
(46.247733, -123.018044); Unnamed (46.247998, -122.777916); Unnamed (46.260464, -  
122.956364); Unnamed (46.263008, -123.020122); Unnamed (46.263983, -122.930316);  
Unnamed (46.266093, -122.981616); Unnamed (46.27194, -122.770063); Unnamed  
(46.281159, -122.760238); Unnamed (46.287658, -122.906283); Unnamed (46.289048, -  
122.963514); Unnamed (46.302765, -123.0657); Unnamed (46.307415, -122.93938);  
Unnamed (46.313054, -122.816361); Unnamed (46.314382, -122.943084); Unnamed  
(46.314535, -123.010247); Unnamed (46.315942, -122.865345); Unnamed (46.317235, -  
122.896545); Unnamed (46.319898, -122.814207); Unnamed (46.320644, -122.892218);  
Unnamed (46.322067, -122.814053); Unnamed (46.32332, -122.859461); Unnamed

(46.323446, -122.886965); Unnamed (46.326968, -123.025803); Unnamed (46.328758, -122.817082); Unnamed (46.329235, -122.909613); Unnamed (46.334118, -122.817188); Unnamed (46.334241, -123.017807); Unnamed (46.336993, -122.893299); Unnamed (46.337756, -122.611236); Unnamed (46.337802, -122.940117); Unnamed (46.339026, -122.940678); Unnamed (46.343885, -122.762274); Unnamed (46.34681, -122.946071); Unnamed (46.348905, -122.769029); Unnamed (46.349667, -123.053432); Unnamed (46.350564, -122.799855); Unnamed (46.358221, -123.038147); Unnamed (46.358277, -122.791338); Unnamed (46.3604, -122.696281); Unnamed (46.360599, -122.736153); Unnamed (46.36403, -123.005163); Unnamed (46.36632, -122.634646); Unnamed (46.366869, -122.89658); Unnamed (46.368123, -122.894117); Unnamed (46.374172, -122.622494); Unnamed (46.375592, -123.099965); Unnamed (46.380427, -122.610242); Unnamed (46.38163, -122.883768); Unnamed (46.38939, -123.065756); Unnamed (46.394019, -122.98067); Unnamed (46.401297, -123.028366); Unnamed (46.41997, -123.040973); Unnamed (46.428911, -123.047482); Unnamed (46.43562, -123.045801); Unnamed (46.437797, -122.999776); Unnamed (46.460336, -123.01792); Unnamed (46.472152, -122.999706); Unnamed (46.508924, -122.885928); Unnamed (46.522845, -122.854611); Unnamed (46.534744, -122.980706); Unnamed (46.537092, -122.823206); Unnamed (46.543646, -122.855197); Arkansas Creek (46.334118, -123.054814); Baxter Creek (46.335963, -122.985106); Becker Creek (46.366541, -123.077711); Brim Creek (46.444408, -123.040408); Campbell Creek (46.345799, -123.069223); Cline Creek (46.339582, -122.856216); Cowlitz River (46.367511, -122.934945); Cowlitz River (46.280749, -122.908759); Cowlitz River (46.270301, -122.918872); Curtis Creek (46.479675, -122.978296); Delameter Creek (46.27323, -123.020718); Duffy Creek

(46.436886, -122.972934); Ferrier Creek (46.469037, -122.92969); Hemlock Creek (46.258298, -122.728132); Hill Creek (46.385982, -122.887561); King Creek (46.528608, -123.017282); Monahan Creek (46.304091, -123.062738); North Fork Brim Creek (46.461931, -123.022977); North Fork Toutle River (46.366681, -122.587092); Olequa Creek (46.522827, -122.88994); Owens Creek (46.39917, -123.045965); Rock Creek (46.347737, -122.815672); Rock Creek (46.36466, -122.979025); Snow Creek (46.448627, -122.9822); Stankey Creek (46.325726, -122.827854); Stillwater Creek (46.376492, -123.114458); Sucker Creek (46.257038, -122.763973); Toutle River (46.329223, -122.725131); Tucker Creek (46.256345, -123.017401); Whittle Creek (46.313257, -122.951576); Unnamed Creek (46.365968, -123.078372); Unnamed Creek (46.366574, -122.6278); Unnamed Creek (46.322752, -122.727564); Unnamed Creek (46.358525, -122.749069); Wyant Creek (46.348562, -122.655808).

(viii) Coweeman Watershed 1708000508. Outlet(s) = Cowlitz River (Lat 46.09677, Long -122.917179); Owl Creek (46.076672, -122.869072); upstream to endpoint(s) in:

Unnamed (46.07177, -122.861942); Unnamed (46.080968, -122.726324); Unnamed (46.082482, -122.722033); Unnamed (46.08384, -122.719656); Unnamed (46.103901, -122.735682); Unnamed (46.11823, -122.725869); Unnamed (46.128746, -122.897993); Unnamed (46.133211, -122.702488); Unnamed (46.134412, -122.877742); Unnamed (46.134559, -122.874501); Unnamed (46.137294, -122.570127); Unnamed (46.140549, -122.616015); Unnamed (46.142157, -122.858404); Unnamed (46.142862, -122.813885); Unnamed (46.143869, -122.609969); Unnamed (46.147673, -122.866141); Unnamed (46.151541, -122.875978); Unnamed (46.157716, -122.6488); Unnamed (46.162608, -122.527406); Unnamed (46.164373, -122.573871); Unnamed (46.16697, -122.62965);

Unnamed (46.169603, -122.912787); Unnamed (46.173346, -122.82947); Unnamed (46.174933, -122.844098); Unnamed (46.175151, -122.934081); Unnamed (46.175276, -122.532665); Unnamed (46.175583, -122.668586); Unnamed (46.180534, -122.898644); Unnamed (46.181396, -122.766774); Unnamed (46.183838, -122.820311); Unnamed (46.188804, -122.78364); Unnamed (46.193597, -122.911471); Unnamed (46.196887, -122.713022); Unnamed (46.20058, -122.827779); Unnamed (46.201892, -122.695345); Unnamed (46.202726, -122.560647); Unnamed (46.213243, -122.666442); Unnamed (46.217243, -122.951394); Unnamed (46.219673, -122.838549); Unnamed (46.220679, -122.889953); Unnamed (46.223168, -122.968869); Unnamed (46.226103, -122.771549); Unnamed (46.226208, -122.803239); Unnamed (46.237678, -122.887353); Unnamed (46.242901, -122.885918); Baird Creek (46.194037, -122.549476); Brown Creek (46.138569, -122.581603); Butler Creek (46.148896, -122.518149); Coweeman River (46.150297, -122.51847); Cowlitz River (46.265795, -122.915793); Goble Creek (46.109525, -122.68388); Hill Creek (46.178271, -122.600223); Jim Watson Creek (46.177642, -122.74165); Leckler Creek (46.231526, -122.948175); Little Baird Creek (46.190281, -122.572141); Mulholland Creek (46.201136, -122.646167); Nineteen Creek (46.140604, -122.623774); North Fork Goble Creek (46.136853, -122.680068); Nye Creek (46.121737, -122.805205); Ostrander Creek (46.210956, -122.764306); Owl Creek (46.091102, -122.865692); Owl Creek (46.076526, -122.861672); Salmon Creek (46.254572, -122.885114); Sam Smith Creek (46.165941, -122.725633); Sandy Bend Creek (46.231734, -122.915112); Skipper Creek (46.169104, -122.577264); South Fork Ostrander Creek (46.184505, -122.826132); Turner Creek (46.116534, -122.816196).



(7) Lower Columbia Subbasin 17080006—(i) Youngs River Watershed 1708000601.

Outlet(s) = Lewis and Clark River (Lat 46.157276, Long -123.8567); Adair Slough (46.164573, -123.890158); Youngs River (46.168659, -123.838128); Skipanon Waterway (46.183693, -123.907231); Alder Creek (46.183694, -123.923138); upstream to endpoint(s) in: Unnamed (45.961144, -123.760693); Unnamed (45.976251, -123.781793); Unnamed (45.987168, -123.864135); Unnamed (46.075646, -123.74625); Unnamed (46.077196, -123.72534); Unnamed (46.081494, -123.687949); Unnamed (46.098839, -123.782036); Unnamed (46.101257, -123.777885); Unnamed (46.101582, -123.791448); Unnamed (46.104561, -123.790689); Unnamed (46.105278, -123.778981); Unnamed (46.115179, -123.862193); Unnamed (46.11823, -123.798015); Unnamed (46.125146, -123.900778); Unnamed (46.133731, -123.821982); Unnamed (46.155148, -123.772037); Unnamed (46.163155, -123.798112); Abercrombie Creek (46.087084, -123.88937); Adair Slough (46.153356, -123.897783); Alder Creek (46.171207, -123.933132); Barrett Slough (46.12204, -123.85348); Binder Creek (46.142527, -123.821985); Binder Slough (46.121358, -123.819543); Brown Creek (46.172014, -123.806343); Casey Slough (46.115066, -123.815982); Cullaby Slough (46.022576, -123.880488); Green Slough (46.124806, -123.869053); Heckard Creek (46.057636, -123.87837); Hortill Creek (46.053191, -123.82798); Jeffers Slough (46.14965, -123.85163); Johnson Slough (46.071237, -123.882259); Klickitat Creek (46.045225, -123.835081); Lewis and Clark River (45.953527, -123.731398); Little Wallooskee River (46.140199, -123.737638); Loowit Creek (46.027001, -123.844093); Middle Fork North Fork Klaskanine River (46.061237, -123.638614); Moosmoos Creek (46.074807, -123.777539); North Fork Klaskanine River (46.048838, -123.636273); North Fork North

Fork Klaskanine River (46.097739, -123.674883); Peterson Slough (46.10793, -123.85242); Shweeash Creek (46.019839, -123.839507); South Fork Klaskanine River (46.065177, -123.731988); Speelyai Creek (46.032437, -123.83321); Stowebolt Creek (46.060439, -123.825132); Tucker Creek (46.075512, -123.824939); Wallooskee River (46.104416, -123.699695); Youngs River (46.065871, -123.791772).

(ii) Big Creek Watershed 1708000602. Outlet(s) = Hillcrest Creek (Lat 46.171377, Long -123.655493); Bear Creek (46.1716, -123.665605); Marys Creek (46.173116, -123.668452); Fertile Valley Creek (46.188744, -123.588332); Blind Slough (46.20114, -123.584906); Big Creek (46.184561, -123.596303); John Day River (46.181573, -123.7404); Mill Creek (46.19298, -123.759637); upstream to endpoint(s) in: Unnamed (46.067847, -123.49896); Unnamed (46.155656, -123.731589); Unnamed (46.176667, -123.477624); Unnamed (46.180584, -123.796858); Unnamed (46.199516, -123.501455); Unnamed (46.211835, -123.534242); Unnamed (46.213817, -123.557667); Unnamed (46.219749, -123.496059); Bear Creek (46.122269, -123.636516); Big Creek (46.068744, -123.477937); Big Noise Creek (46.160378, -123.50188); Blind Slough (46.230154, -123.5256); Coon Creek (46.072977, -123.551698); Davis Creek (46.193487, -123.48968); Elk Creek (46.057446, -123.531954); Fertile Valley Creek (46.180229, -123.574191); McNary Creek (46.131584, -123.45871); Grizzly Slough (46.209179, -123.551962); Hillcrest Creek (46.155615, -123.633555); John Day River (46.151824, -123.718295); Gnat Creek (46.134382, -123.492375); Little Bear Creek (46.11197, -123.661934); Little Creek (46.138483, -123.606302); Marys Creek (46.136519, -123.685932); Mill Creek (46.143237, -123.582679); Mud Creek (46.089977, -

123.55188); Pigpen Creek (46.102416, -123.559042); Saspal Slough (46.213023, -123.5376); Supply Creek (46.163644, -123.538404).

(iii) Grays Bay Watershed 1708000603. Outlet(s) = Unnamed (Lat 46.242128, Long -123.884815); Unnamed (46.242369, -123.889547); Unnamed (46.246062, -123.909891); Unnamed (46.249228, -123.863946); Unnamed (46.259183, -123.852059); Unnamed (46.260409, -123.850081); Unnamed (46.261711, -123.842086); Unnamed (46.269817, -123.830183); Crooked Creek (46.296355, -123.677056); Sisson Creek (46.301761, -123.72555); Chinook River (46.303571, -123.968574); Grays River (46.306824, -123.685025); Deep River (46.310771, -123.714286); Wallacut River (46.315209, -124.020283); upstream to endpoint(s) in: Unnamed (46.252832, -123.906587); Unnamed (46.255601, -123.883337); Unnamed (46.257057, -123.892766); Unnamed (46.261834, -123.877718); Unnamed (46.26971, -123.872478); Unnamed (46.272099, -123.863261); Unnamed (46.272788, -123.855154); Unnamed (46.273099, -123.847441); Unnamed (46.273923, -123.833921); Unnamed (46.27462, -123.841297); Unnamed (46.282558, -123.76132); Unnamed (46.289926, -123.938085); Unnamed (46.296119, -123.751262); Unnamed (46.305607, -123.945919); Unnamed (46.320823, -123.638104); Unnamed (46.332306, -123.674913); Unnamed (46.349054, -123.563997); Unnamed (46.362133, -123.397387); Unnamed (46.367197, -123.661101); Unnamed (46.370018, -123.661652); Unnamed (46.383643, -123.54663); Unnamed (46.3861, -123.399009); Unnamed (46.389563, -123.443531); Unnamed (46.398896, -123.603127); Unnamed (46.409223, -123.563384); Unnamed (46.40988, -123.591182); Unnamed (46.414991, -123.598881); Unnamed (46.419132, -123.377411); Unnamed (46.4231, -123.465561); Unnamed (46.427724, -123.449351); Unnamed (46.428912, -123.389161); Unnamed (46.429717, -

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 (46.440236, -123.539966); Unnamed (46.445599, -123.389398); Unnamed (46.453434, -  
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 Creek (46.403572, -123.442837); Cabin Creek (46.44222, -123.485741); Campbell Creek  
 (46.358257, -123.709343); Chinook River (46.274479, -123.902553); Crooked Creek  
 (46.313288, -123.59644); Deep River (46.354054, -123.688621); East Fork Grays River  
 (46.42414, -123.36983); Empi Creek (46.31383, -123.638514); Fossil Creek (46.354523,  
 -123.484306); Grays River (46.491024, -123.4354); Hendrickson Canyon (46.373524, -  
 123.664774); Hendrickson Creek (46.361368, -123.655366); Honey Creek (46.375646, -  
 123.603913); Hull Creek (46.405494, -123.57846); Impie Creek (46.318309, -  
 123.617177); Johnson Creek (46.463847, -123.502087); Kessel Creek (46.33321, -  
 123.586047); King Creek (46.34008, -123.577604); Klints Creek (46.352885, -  
 123.546067); Lassila Creek (46.330703, -123.717849); Malone Creek (46.362725, -  
 123.638537); Mitchell Creek (46.457074, -123.405992); North Fork South Fork Crooked  
 Creek (46.302415, -123.588653); Rangila Slough (46.379454, -123.663919); Salme  
 Creek (46.345311, -123.727176); Seal Creek (46.330013, -123.666112); Shannon Creek  
 (46.397758, -123.544779); Silver Creek (46.361718, -123.606566); Sisson Creek  
 (46.326508, -123.744171); South Creek (46.298871, -123.634124); South Fork Crooked  
 Creek (46.291379, -123.594068); South Fork Grays River (46.378555, -123.338976);  
 Sweigiler Creek (46.421912, -123.519244); Thadbar Creek (46.338413, -123.617861);

Wallacut River (46.320188, -124.009121); West Fork Grays River (46.45098, -123.56517); Unnamed Creek (46.30366, -123.59053).

(8) Clackamas Subbasin 17090011—(i) Collawash River Watershed 1709001101.

Outlet(s) = Collawash River (Lat 45.032022, Long -122.061189); upstream to endpoint(s) in: Collawash River (44.950761, -122.036265); Fan Creek (44.990371, -122.070099); Farm Creek (44.964523, -122.056455); Hot Springs Fork (44.938225, -122.172924); Nohorn Creek (44.951768, -122.178914); Pansy Creek (44.961276, -122.142173); Thunder Creek (44.971026, -122.114357).

(ii) Upper Clackamas River Watershed 1709001102. Outlet(s) = Clackamas River (Lat 45.032073, Long -122.060326); upstream to endpoint(s) in: Unnamed (44.921586, -121.891779); Unnamed (44.946758, -121.870376); Unnamed (44.965941, -121.890584); Unnamed (44.984829, -121.88591); Unnamed (45.00955, -121.913461); Unnamed (45.009742, -121.911448); Berry Creek (44.842515, -121.913476); Clackamas River (44.872157, -121.84842); Cub Creek (44.840609, -121.886756); Fawn Creek (44.918888, -121.906568); Hunter Creek (44.892373, -121.929425); Kansas Creek (44.983299, -121.898876); Last Creek (44.971428, -121.855763); Lowe Creek (44.950581, -121.911761); Pinhead Creek (44.941643, -121.837499); Pot Creek (45.018321, -121.903626); Rhododendron Creek (44.935961, -121.905497); Wall Creek (44.954634, -121.88565); Wolf Creek (45.009327, -121.896447); Unnamed Creek (44.939221, -121.896788).

(iii) Oak Grove Fork Clackamas River Watershed 1709001103. Outlet(s) = Oak Grove Fork Clackamas River (Lat 45.074631, Long -122.053402); upstream to endpoint(s) in:

Oak Grove Fork Clackamas River (45.082079, -121.987346); Pint Creek (45.083562, -122.037835).

(iv) Middle Clackamas River Watershed 1709001104. Outlet(s) = Clackamas River (Lat 45.243027, Long -122.28019); upstream to endpoint(s) in: Big Creek (45.071509, -122.07317); Clackamas River (45.032073, -122.060326); Fish Creek (45.067042, -122.165433); North Fork Clackamas River (45.239994, -122.223929); Oak Grove Fork Clackamas River (45.074631, -122.053402); Mag Creek (45.058467, -122.049959); Roaring River (45.1771, -122.066074); Sandstone Creek (45.088154, -122.075766); South Fork Clackamas River (45.193817, -122.226266); Tag Creek (45.060352, -122.048674); Tar Creek (45.049246, -122.058186); Trout Creek (45.037826, -122.073273); Wash Creek (45.047152, -122.190238); Whale Creek (45.110262, -122.085444).

(v) Eagle Creek Watershed 1709001105. Outlet(s) = Eagle Creek (Lat 45.353023, Long -122.38235); upstream to endpoint(s) in: Unnamed (45.306541, -122.253481); Bear Creek (45.333888, -122.257969); Currin Creek (45.337212, -122.357579); Delph Creek (45.266726, -122.169986); Eagle Creek (45.276382, -122.200963); Little Eagle Creek (45.301454, -122.167019); North Fork Eagle Creek (45.315132, -122.116618); Trout Creek (45.330806, -122.124752).

(vi) Lower Clackamas River Watershed 1709001106. Outlet(s) = Clackamas River (Lat 45.372568, Long -122.607652); upstream to endpoint(s) in: Unnamed (45.258538, -122.299446); Unnamed (45.350086, -122.487187); Unnamed (45.367637, -122.306895); Unnamed (45.377873, -122.36847); Unnamed (45.405591, -122.323467); Unnamed (45.411148, -122.302642); Bargfeld Creek (45.319393, -122.440978); Clackamas River

(45.243027, -122.28019); Clear Creek (45.204742, -122.332063); Deep Creek (45.341779, -122.281223); Foster Creek (45.377099, -122.440414); Goose Creek (45.361912, -122.356092); Little Clear Creek (45.194779, -122.32996); Little Clear Creek (45.279953, -122.406729); Mosier Creek (45.268224, -122.452581); North Fork Deep Creek (45.426893, -122.304417); Richardson Creek (45.409345, -122.450358); Rock Creek (45.41554, -122.502566); Tickle Creek (45.391446, -122.27456).

(9) Lower Willamette Subbasin 17090012—(i) Johnson Creek Watershed 1709001201.

Outlet(s) = Johnson Creek (Lat 45.443607, Long -122.646568); upstream to endpoint(s) in: Unnamed (45.395793, -122.637786); Unnamed (45.479793, -122.637275); Crystal Springs Creek (45.481991, -122.636282); Johnson Creek (45.460935, -122.344466); Kellogg Creek (45.416585, -122.599025); Kelly Creek (45.467217, -122.484045); Mount Scott Creek (45.430427, -122.557033); Oswego Creek (45.410712, -122.662215); Tryon Creek (45.447026, -122.687232); Willamette River (45.372568, -122.607652)).

(ii) Scappoose Creek Watershed 1709001202. Outlet(s) = Multnomah Channel (Lat 45.618917, Long -122.796356); Multnomah Channel (45.856115, -122.795022); upstream to endpoint(s) in: Brush Creek (45.811623, -122.98903); Cox Creek (45.857229, -122.945231); Dart Creek (45.880546, -122.886563); Deep Creek (45.789148, -122.918002); Fall Creek (45.80123, -122.93963); Gourlay Creek (45.728432, -122.95866); Lazy Creek (45.745352, -122.992007); Lizzie Creek (45.824543, -122.994287); McCarthy Creek (45.641171, -122.859938); McNulty Creek (45.836482, -122.859642); Milton Creek (45.910301, -122.975949); North Scappoose Creek (45.826402, -123.0147); Raymond Creek (45.72705, -122.929237); Salmon Creek (45.867532, -122.901361); South Scappoose Creek (45.76167, -123.011604); Sturgeon

Lake (45.72323, -122.79232); Sturgeon Lake (45.749815, -122.802752); Sturgeon Lake (45.725503, -122.830343).

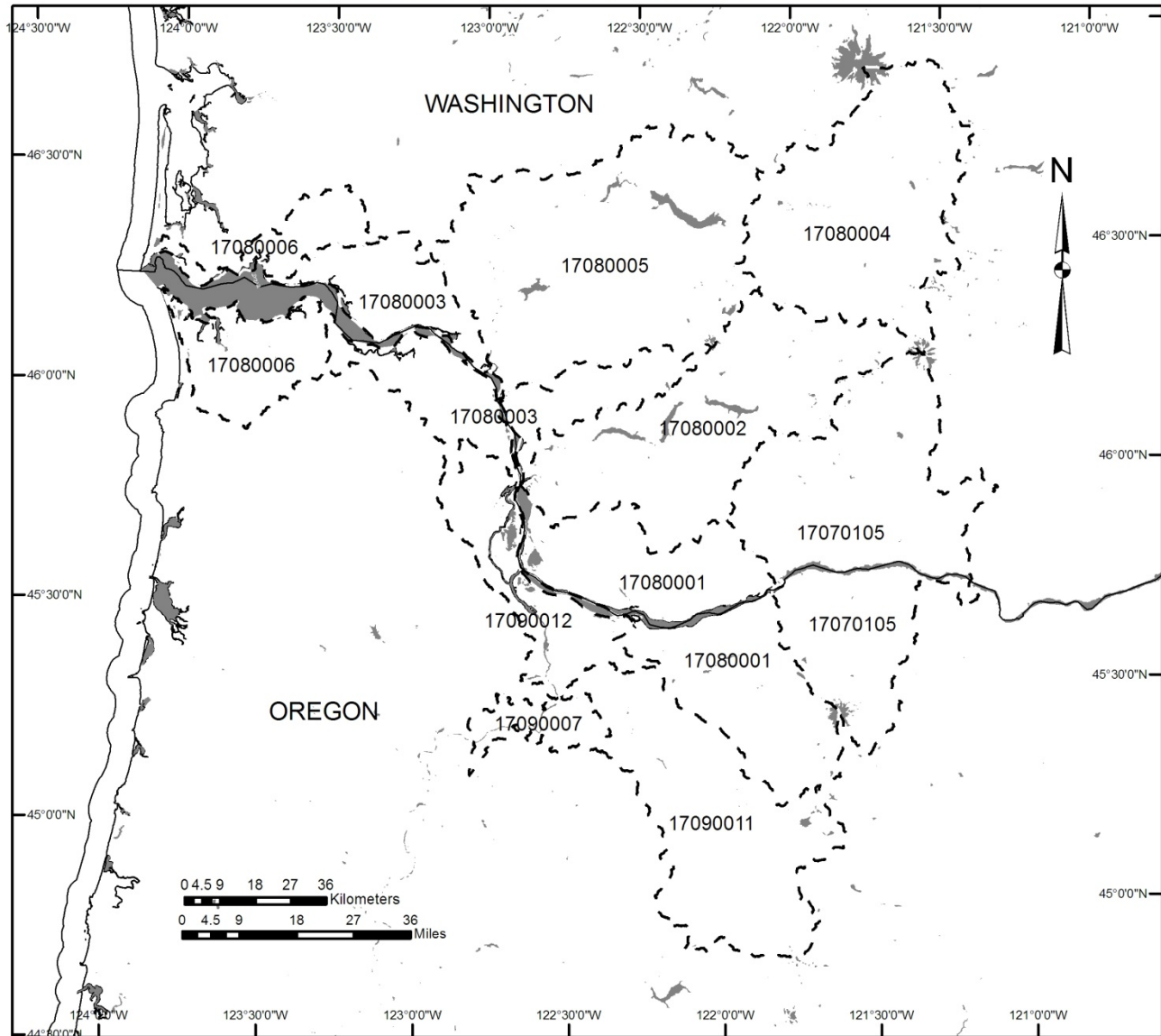
(iii) Columbia Slough/Willamette River Watershed 1709001203. Outlet(s) = Willamette River (Lat 45.653521, Long -122.764965); upstream to endpoint(s) in: Swan Island Basin (45.565019, -122.713073); Columbia Slough (45.607691, -122.745914); Unnamed (45.615235, -122.740691); Unnamed (45.627985, -122.754739); Willamette River (45.443607, -122.646568).

(10) Lower Columbia River Corridor—Lower Columbia River Corridor.Outlet(s) = Columbia River (Lat 46.2485, Long -124.0782) upstream to endpoint(s) in: Columbia River (Lat 45.605237, Long -121.633264).

(11) Maps of critical habitat for the lower Columbia River coho salmon DPS follow:



## Map of the Lower Columbia River Coho ESU



### Legend

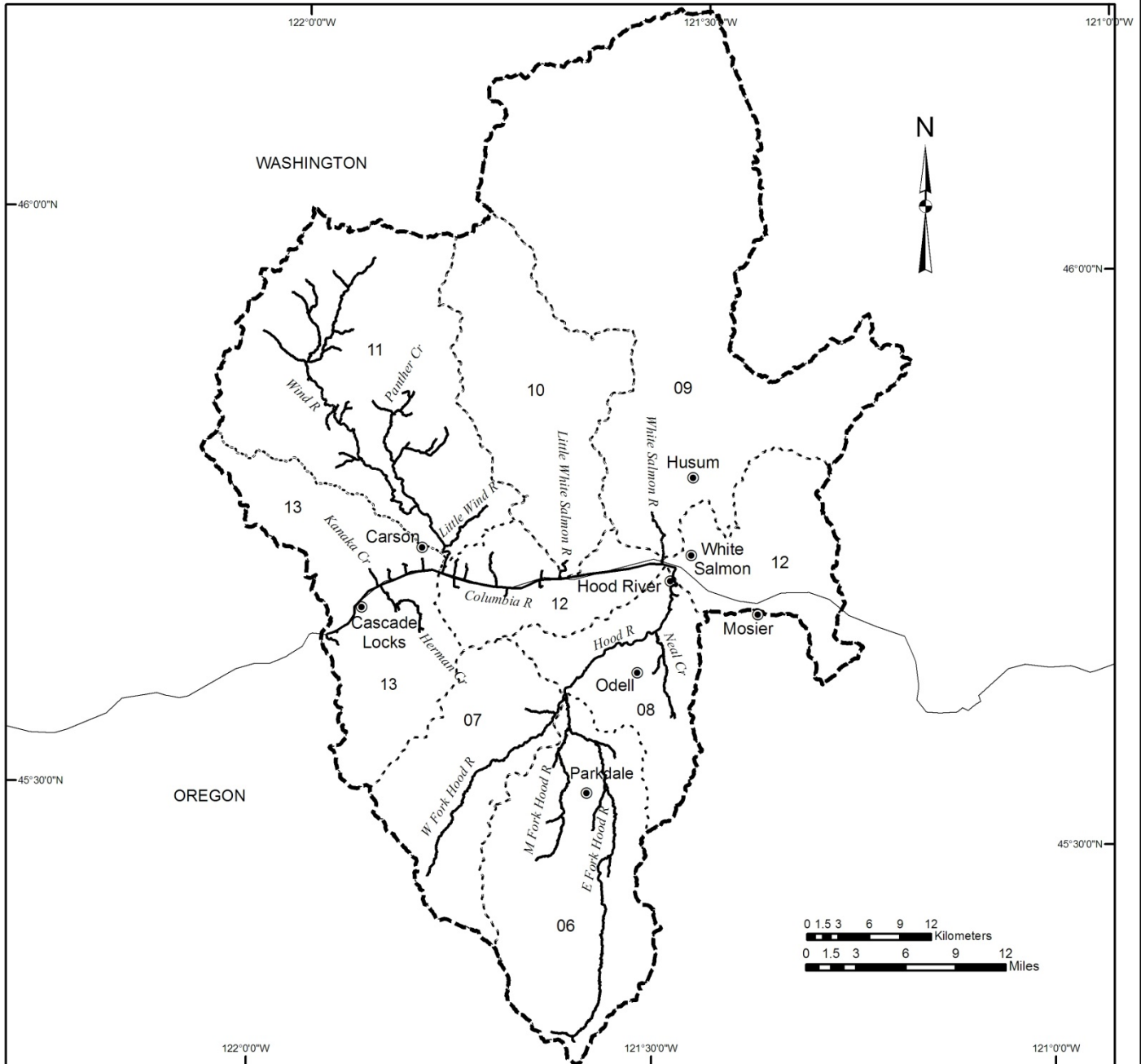
- State Boundaries
- Subbasin Boundaries
- Waterbodies

### Area of Detail



# Proposed Critical Habitat for the Lower Columbia River Coho ESU

## Middle Columbia-Hood Subbasin 17070105



### Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

06 - 13 = Watershed code - last 2 digits of 17070105xx

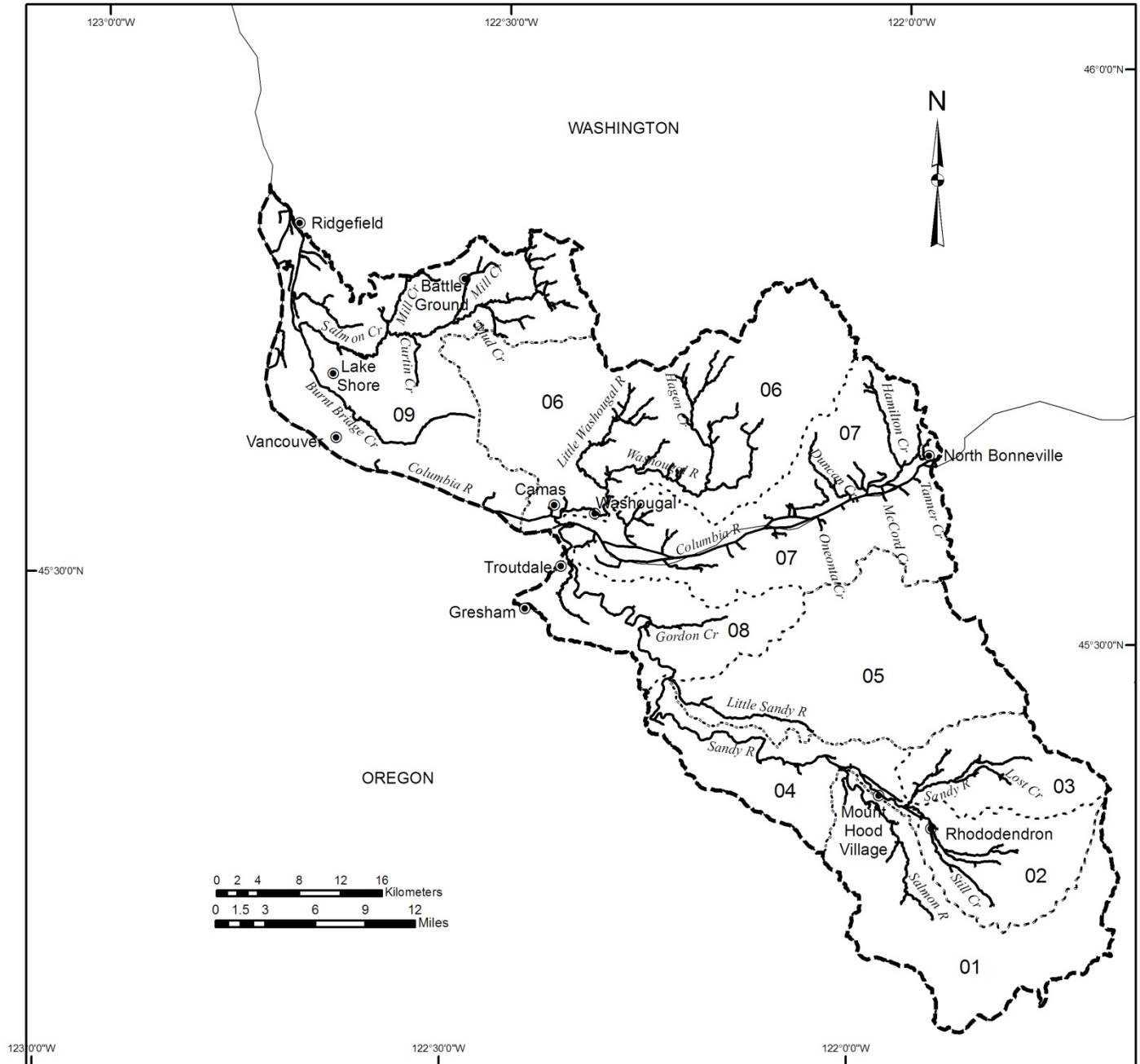
### Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Lower Columbia River Coho ESU

# Lower Columbia / Sandy Subbasin 17080001



## Legend

- Cities / Towns
- Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 09 = Watershed code - last 2 digits of 17080001xx

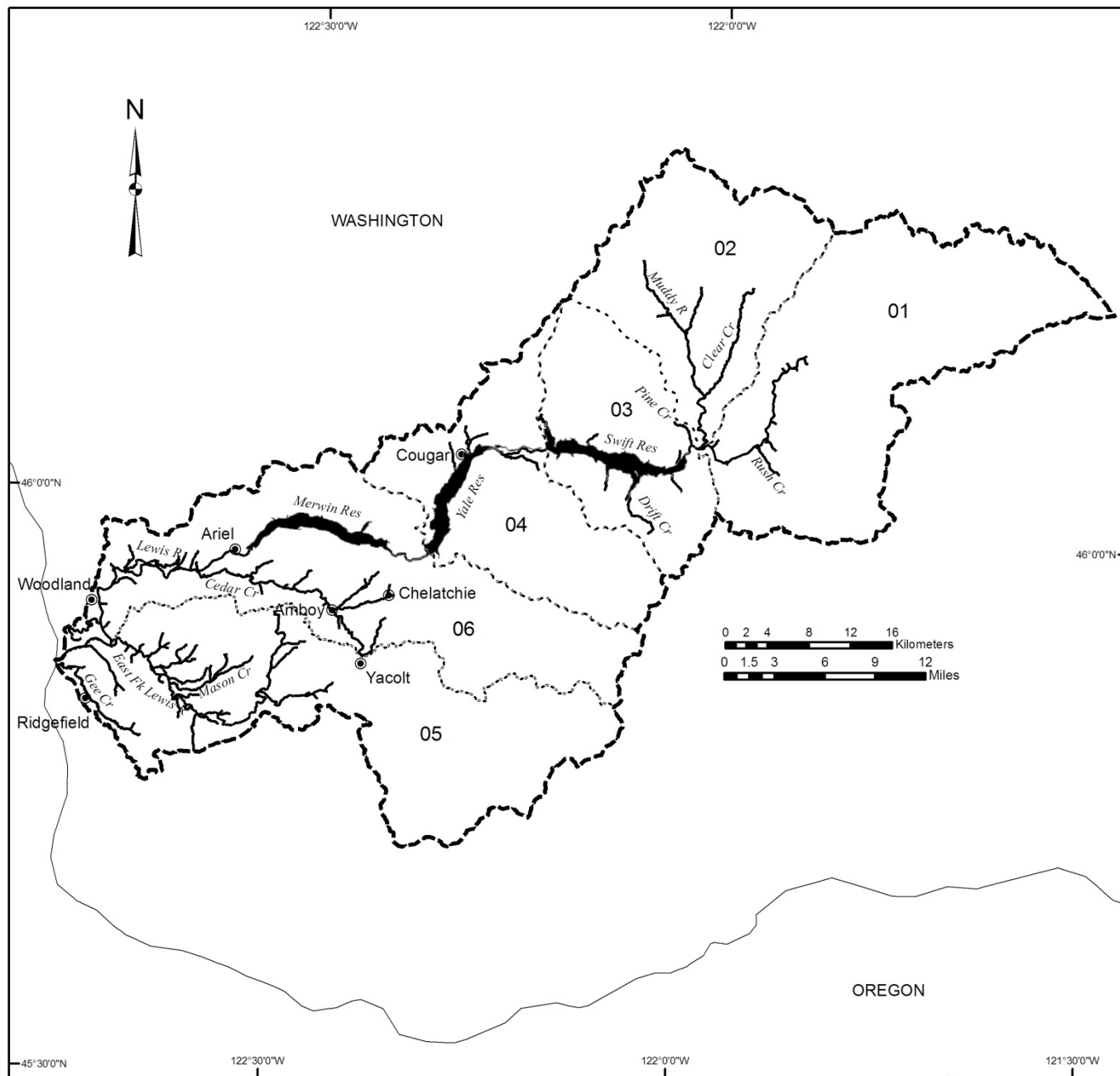
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Lewis Subbasin  
17080002



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 06 = Watershed code - last 2 digits of 17080002xx

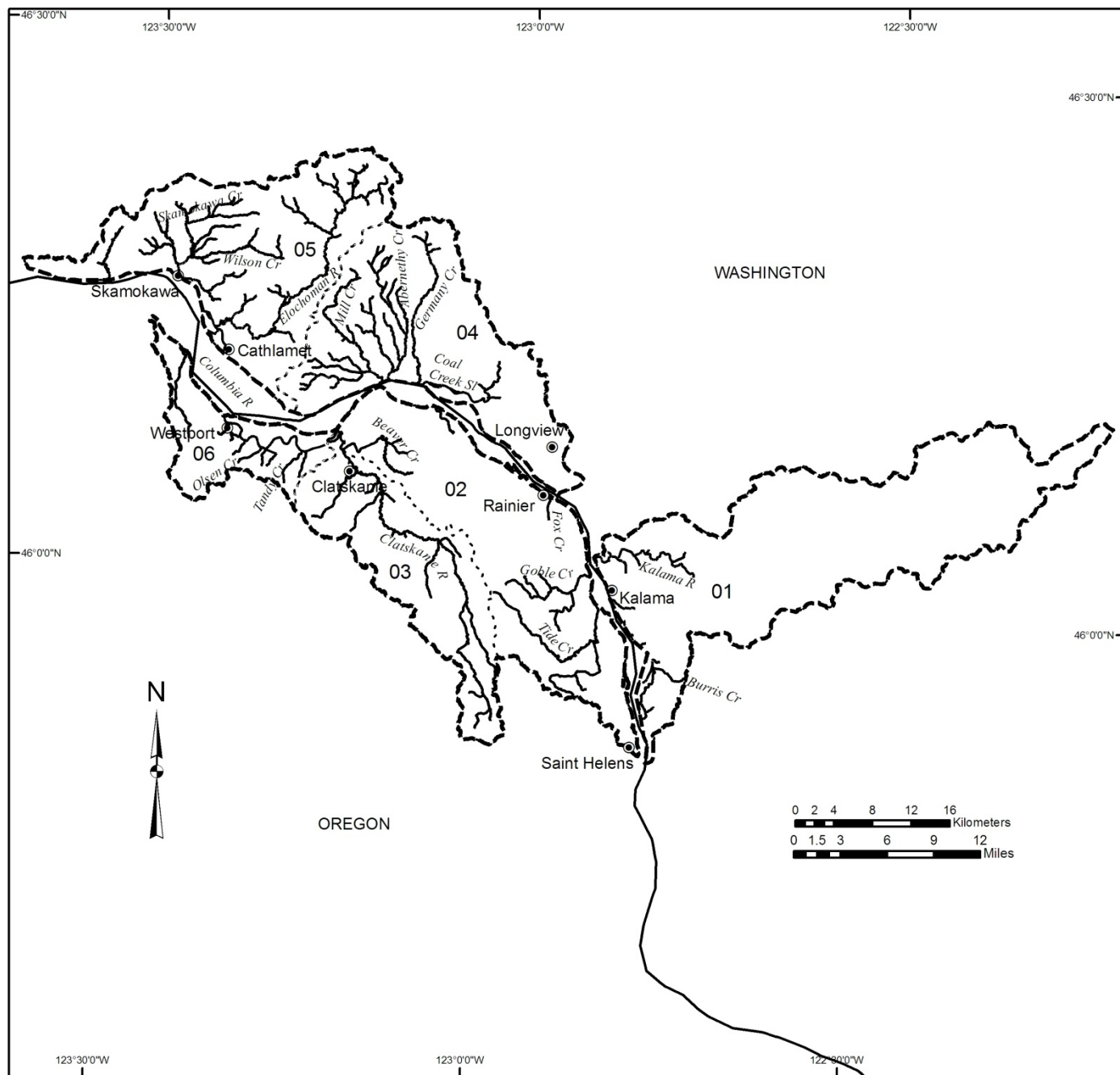
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Lower Columbia / Clatskanie Subbasin  
17080003



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 06 = Watershed code - last 2 digits of 17080003xx

## Area of Detail

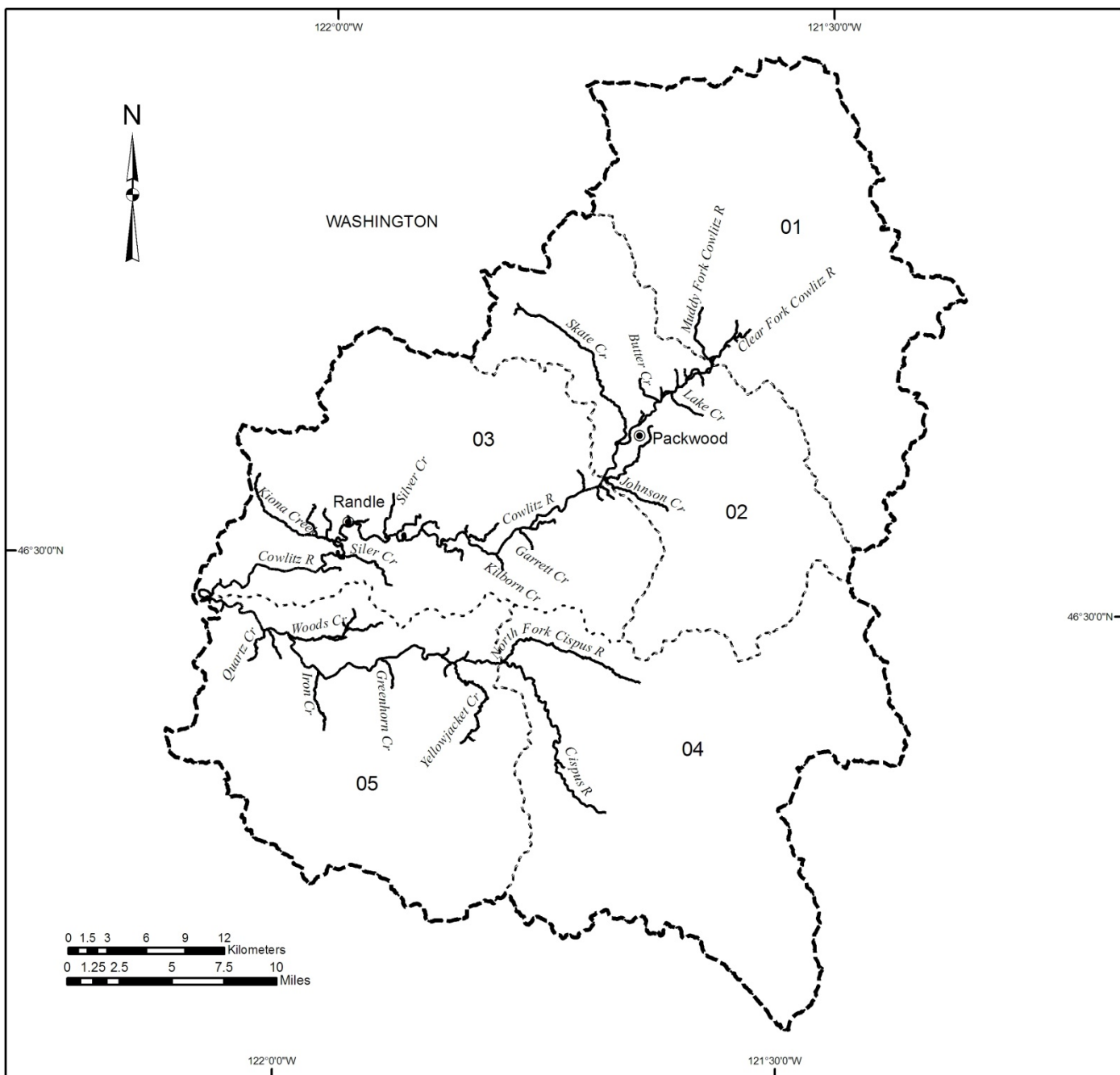


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.



# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Upper Cowlitz Subbasin  
17080004



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

01 - 05 = Watershed code - last 2 digits of 17080004xx

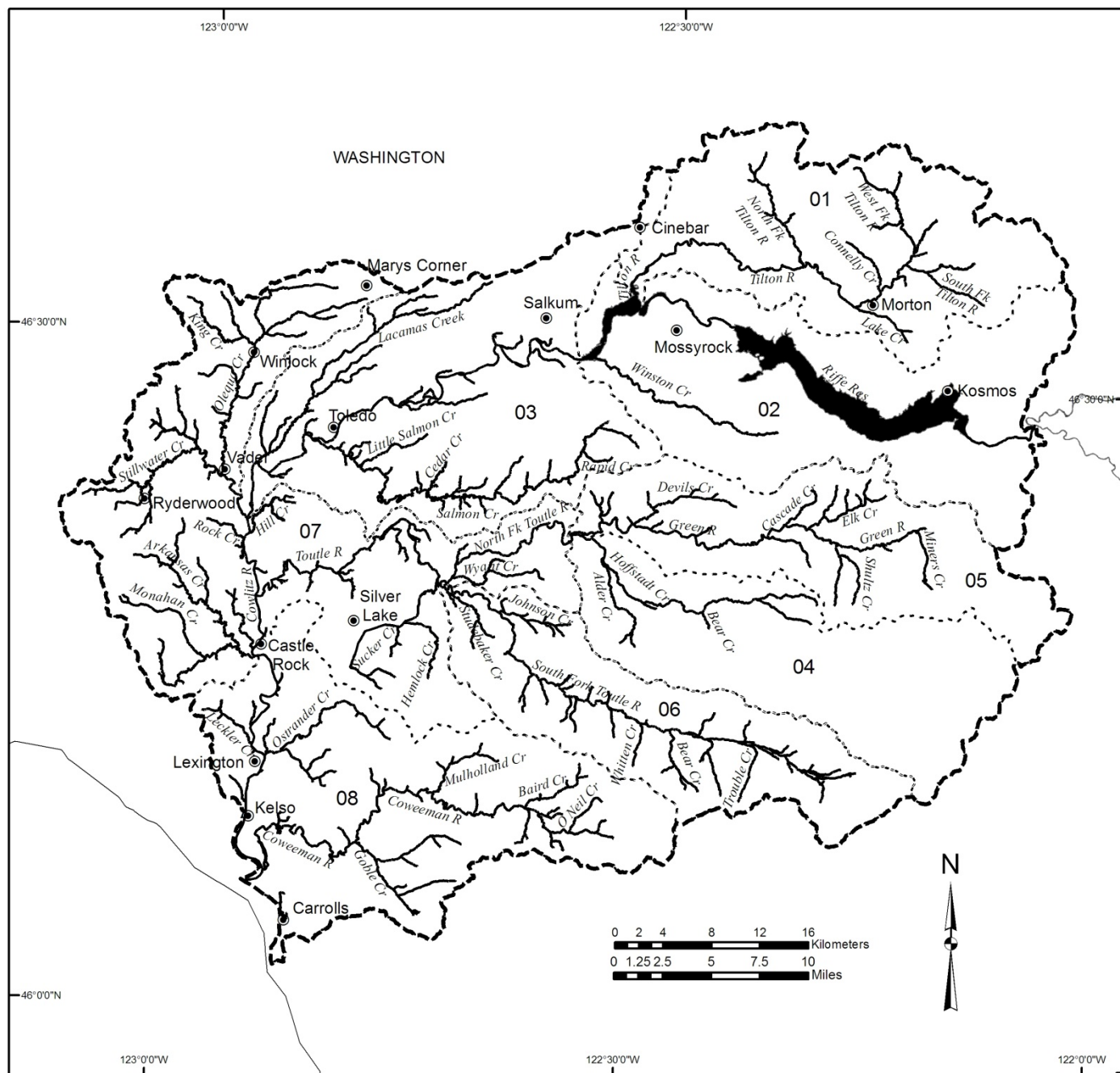
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Cowlitz Subbasin  
17080005



## Legend

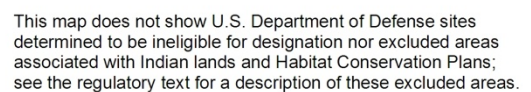
- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

01 - 08 = Watershed code - last 2 digits of 17080005xx

## Area of Detail



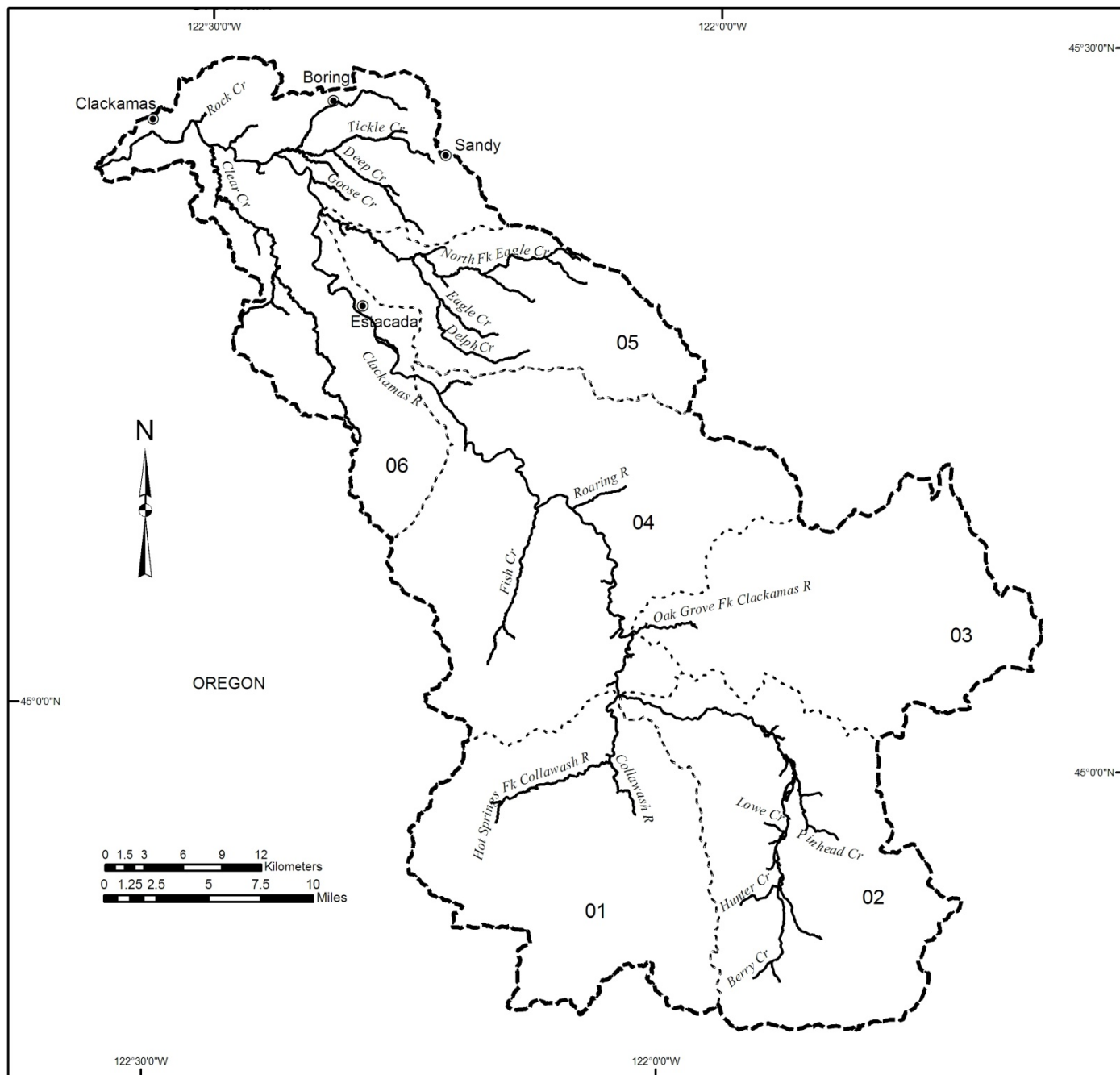
This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

Lower Columbia Subbasin  
17080006



# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Clackamas Subbasin  
17090011



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 06 = Watershed code - last 2 digits of 17090011xx

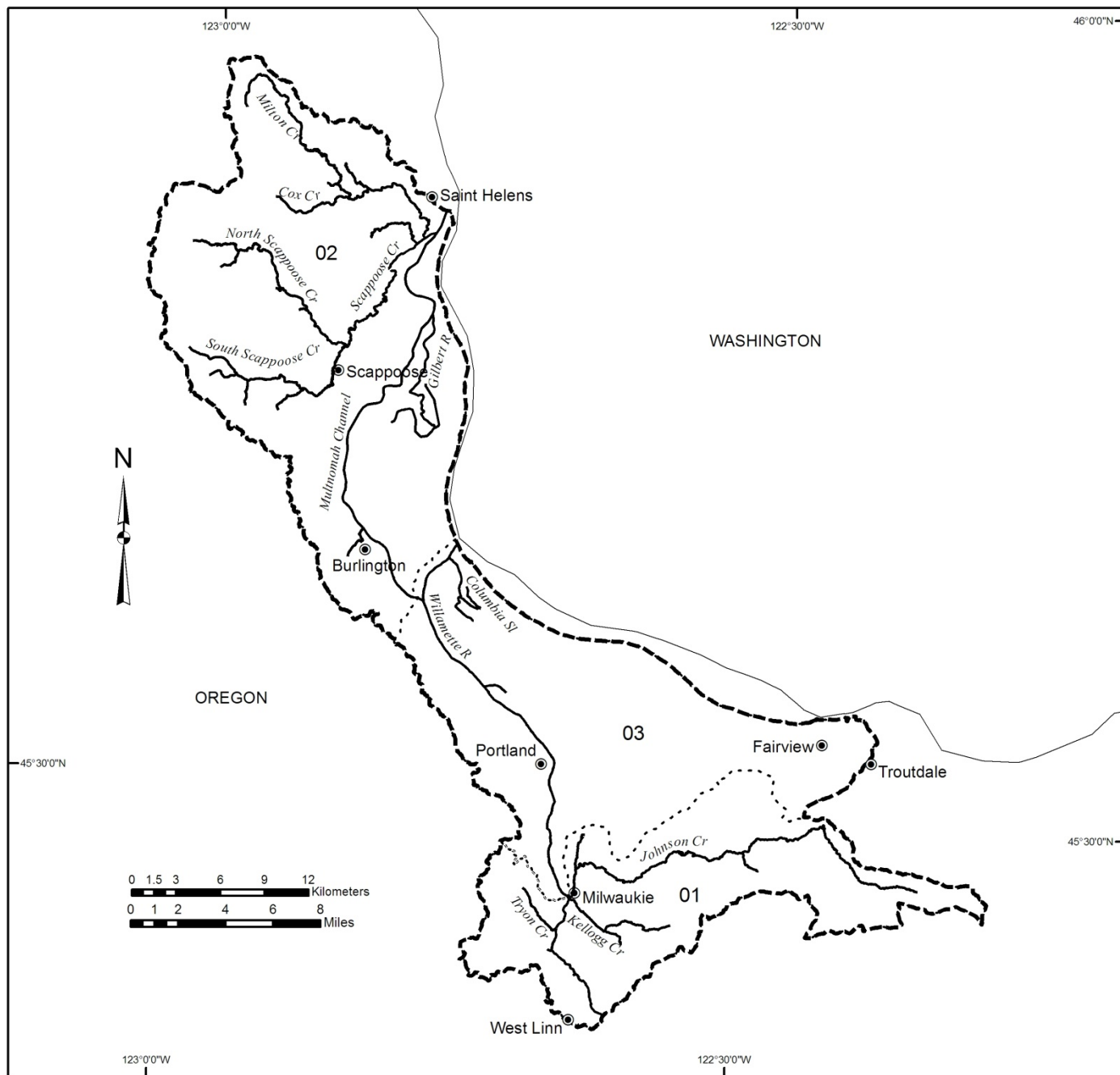
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Lower Columbia River Coho ESU

Lower Willamette Subbasin  
17090012



## Legend

- Cities / Towns
- Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

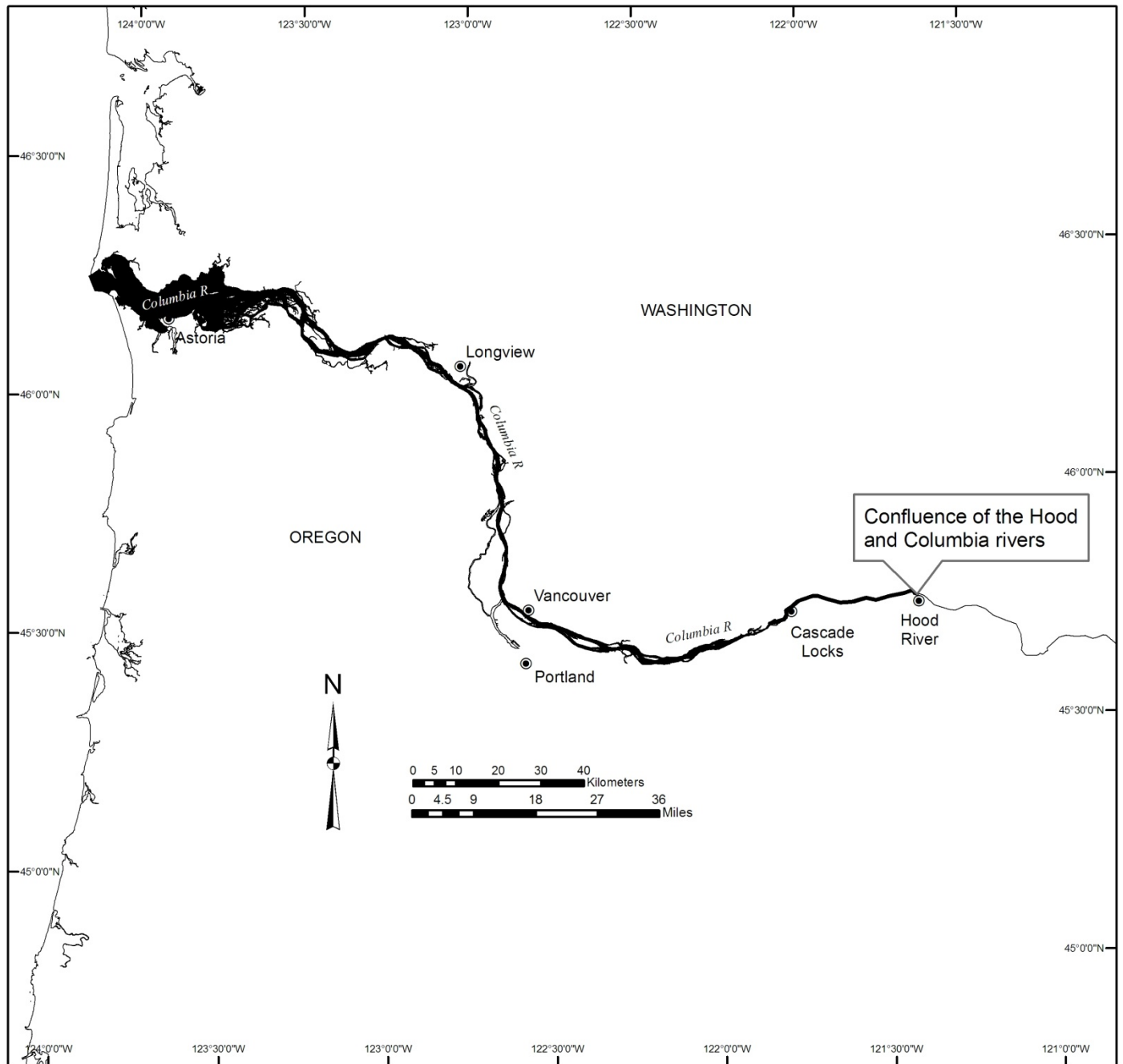
01 - 03 = Watershed code - last 2 digits of 17090012xx

## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Columbia River Rearing / Migration Corridor for the Lower Columbia River Coho ESU



## Legend

- Cities / Towns
- Critical Habitat
- State Boundary

## Lower Columbia River Coho ESU

### Lower Columbia River Corridor

The lower Columbia River corridor is that segment from the mouth of the Columbia River at the Pacific Ocean upstream to the confluence with the Hood River (Oregon).

(u) Puget Sound Steelhead (Oncorhynchus mykiss). Critical habitat is designated to include the areas defined in the following subbasins:

(1) Strait Of Georgia Subbasin 17110002—(i) Bellingham Bay 1711000201. Outlet(s) = Chuckanut Creek (Lat 48.700204, Long -122.4949); Padden Creek (48.720212, -122.507267); Squalicum Creek (48.761135, -122.508464); Whatcom Creek (48.754617, -122.482672); upstream to endpoint(s) in: Chuckanut Creek (48.695855, -122.459009); Padden Creek (48.716119, -122.492112); Squalicum Creek (48.800413, -122.401884); Toad Creek (48.790221, -122.420404); Unnamed (48.694566, -122.460342); Unnamed (48.749891, -122.443697); Unnamed (48.776621, -122.485934); Unnamed (48.798187, -122.478488); Unnamed (48.804196, -122.480665); Unnamed (48.808622, -122.395832); Unnamed (48.81125, -122.390305); Unnamed (48.818485, -122.394634); Whatcom Creek (48.755728, -122.439609).

(ii) Samish River Watershed 1711000202. Outlet(s) = Samish River (Lat 48.554929, Long -122.456811); upstream to endpoint(s) in: Bear Creek (48.637599, -122.376587); Butler Creek (48.604896, -122.321047); Doolittle Creek (48.636011, -122.217771); Dry Creek (48.59728, -122.276992); Ennis Creek (48.656411, -122.192383); Friday Creek (48.648567, -122.371833); Parson Creek (48.601221, -122.282987); Silver Creek (48.64571, -122.329513); Swede Creek (48.558933, -122.226206); Thomas Creek (48.547551, -122.26923); Thunder Creek (48.597861, -122.214046); Unnamed (48.547031, -122.265845); Unnamed (48.601928, -122.266484); Unnamed (48.60898, -122.23177); Unnamed (48.624483, -122.220011); Unnamed (48.635349, -122.312454); Unnamed (48.684736, -122.198027); Vernon Creek (48.592764, -122.243096).

(iii) Birch Bay 1711000204. Outlet(s) = California Creek (Lat 48.96192, Long -122.732814); Dakota Creek (48.971842, -122.723798); Terrell Creek (48.921475, -122.745208); Unnamed (48.937195, -122.752893); upstream to endpoint(s) in: California Creek (48.894356, -122.608319); Haynie Creek (48.991982, -122.649909); North Fork Dakota Creek (48.984477, -

122.568636); South Fork Dakota Creek (48.946745, -122.620945); Terrell Creek (48.873999, -122.688964); Unnamed (48.89583, -122.753422); Unnamed (48.937989, -122.750521); Unnamed (48.973734, -122.66835); Unnamed (48.978003, -122.695909); Unnamed (48.980675, -122.707693).

(2) Nooksack Subbasin 17110004—(i) Upper North Fork Nooksack River Watershed 1711000401. Outlet(s) = Canyon Creek (Lat 48.90661, Long -121.989864); North Fork Nooksack River (48.90561, -121.987814); upstream to endpoint(s) in: Canyon Creek (48.965226, -121.876396); Cascade Creek (48.898964, -121.863499); Cornell Creek (48.87524, -121.956735); Deadhorse Creek (48.902507, -121.837147); Gallop Creek (48.864748, -121.950975); Glacier Creek (48.841264, -121.903083); Hedrick Creek (48.89601, -121.971728); North Fork Nooksack River (48.905296, -121.8089); Thompson Creek (48.890132, -121.878197); West Cornell Creek (48.856057, -121.988578).

(ii) Middle Fork Nooksack River Watershed 1711000402. Outlet(s) = Canyon Creek (Lat 48.835008, Long -122.153051); Middle Fork Nooksack River (48.833037, -122.153128); upstream to endpoint(s) in: Canyon Creek (48.841923, -122.103727); Heislars Creek (48.778707, -122.092743); Middle Fork Nooksack River (48.771145, -122.072977); Porter Creek (48.794092, -122.103694); Unnamed (48.779218, -122.121048); Unnamed (48.780767, -122.116975); Unnamed (48.787472, -122.12477); Unnamed (48.820768, -122.122144).

(iii) South Fork Nooksack River Watershed 1711000403. Outlet(s) = South Fork Nooksack River (Lat 48.807821, Long -122.20252); upstream to endpoint(s) in: Bell Creek (48.69622, -121.87518); Cavanaugh Creek (48.638874, -122.057619); Deer Creek (48.603978, -122.092479); Hard Scrabble Falls Creek (48.759936, -122.22864); Howard Creek (48.612814, -121.966548); Hutchinson Creek (48.722661, -122.098154); Jones Creek (48.715065, -122.215748); Loomis Creek (48.665079, -121.815934); Mccarty Creek (48.727377, -122.219879); McGinnis Creek (48.61109, -121.958839); Plumbago Creek (48.6042, -

122.106088); Skookum Creek (48.68695, -122.104163); Standard Creek (48.74615, -122.224446); Sygitowicz Creek (48.772017, -122.228041); Unnamed (48.600525, -122.039331); Unnamed (48.600658, -122.022203); Unnamed (48.60222, -122.059486); Unnamed (48.602513, -122.016247); Unnamed (48.602549, -122.004019); Unnamed (48.604219, -121.992247); Unnamed (48.604523, -121.915611); Unnamed (48.60642, -121.930219); Unnamed (48.607985, -121.918823); Unnamed (48.608266, -121.911587); Unnamed (48.609571, -121.982189); Unnamed (48.61019, -121.954851); Unnamed (48.630045, -122.118545); Unnamed (48.661705, -122.11915); Unnamed (48.679949, -121.933538); Unnamed (48.681, -122.176044); Unnamed (48.687907, -122.159547); Unnamed (48.69125, -121.932816); Unnamed (48.698785, -121.912135); Unnamed (48.700841, -121.880954); Unnamed (48.70222, -122.109268); Unnamed (48.725471, -122.168225); Unnamed (48.738227, -122.105899); Unnamed (48.745076, -122.11099); Unnamed (48.776775, -122.221381); Unnamed (48.78219, -122.218602); Unnamed (48.799589, -122.186071); Wanlick Creek (48.66309, -121.801322).

(iv) Lower North Fork Nooksack River Watershed 1711000404. Outlet(s) = Anderson Creek (Lat 48.866658, Long -122.324286); Nooksack River (48.869803, -122.319417); upstream to endpoint(s) in: Anderson Creek (48.797051, -122.32598); Bell Creek (48.849394, -122.163142); Boulder Creek (48.936973, -122.02081); Canyon Creek (48.90661, -121.989864); Coal Creek (48.890899, -122.15529); Kendall Creek (48.941107, -122.133842); Kenney Creek (48.851169, -122.11389); Maple Creek (48.926054, -122.07647); Mitchell Creek (48.831119, -122.218653); North Fork Nooksack River (48.90561, -121.987814); Racehorse Creek (48.881706, -122.128437); Smith Creek (48.843717, -122.255666); South Fork Nooksack River (48.807821, -122.20252); Unnamed (48.809155, -122.328886); Unnamed (48.816885, -122.229843); Unnamed (48.830856, -122.173308); Unnamed (48.834543, -122.153069); Unnamed (48.843097, -122.158088); Unnamed (48.850754, -122.120796); Unnamed (48.899154, -122.092519); Unnamed (48.901819, -122.078973); Unnamed (48.902047, -

122.083185); Unnamed (48.911444, -122.01855); Unnamed (48.912051, -122.063062);  
Unnamed (48.913227, -122.036411); Unnamed (48.916696, -122.103739); Wildcat Creek  
(48.896003, -122.005239).

(v) Nooksack River Watershed 1711000405. Outlet(s) = Nooksack River (Lat 48.773567,  
Long -122.599888); Silver Creek (48.780374, -122.56738); upstream to endpoint(s) in: Anderson  
Creek (48.866658, -122.324286); Bertrand Creek (49.000000, -122.524755); Fishtrap Creek  
(49.000000, -122.406584); Fourmile Creek (48.888842, -122.422525); Mormon Ditch  
(48.943782, -122.382402); Nooksack River (48.869803, -122.319417); Pepin Creek (49.000000,  
-122.473673); Stickney Slough (48.971492, -122.390969); Tenmile Creek (48.841838, -  
122.377054); Unnamed (48.840108, -122.411055); Unnamed (48.849253, -122.431795);  
Unnamed (48.854029, -122.477112); Unnamed (48.854666, -122.439035); Unnamed  
(48.870978, -122.599973); Unnamed (48.896998, -122.339775); Unnamed (48.913285, -  
122.364233); Unnamed (48.926314, -122.591314); Unnamed (48.967318, -122.524502);  
Unnamed (48.998264, -122.501263); Unnamed (49.000000, -122.474268).

(3) Upper Skagit Subbasin 17110005—(i) Skagit River/Gorge Lake Watershed  
1711000504. Outlet(s) = Goodell Creek (Lat 48.674399, Long -121.26504); Skagit River  
(48.672375, -121.262508); upstream to endpoint(s) in: Goodell Creek (48.729929, -121.314);  
Newhalem Creek (48.664832, -121.255072); Skagit River (48.676125, -121.241661).

(ii) Skagit River/Diobsud Creek Watershed 1711000505. Outlet(s) = Skagit River  
(48.522186, -121.431634); upstream to endpoint(s) in: Alma Creek (48.599105, -121.36141);  
Bacon Creek (48.675306, -121.453097); Copper Creek (48.588469, -121.370907); Damnation  
Creek (48.627647, -121.339559); Diobsud Creek (48.583981, -121.441197); East Fork Bacon  
Creek (48.669034, -121.430334); Falls Creek (48.633251, -121.427043); Oakes Creek  
(48.619075, -121.412357); Skagit River (48.672375, -121.262508); Thorton Creek (48.649594, -  
121.307697); Unnamed (48.550953, -121.419261); Unnamed (48.627482, -121.324941);

Unnamed (48.630803, -121.424055); Unnamed (48.652391, -121.297267); Unnamed (48.65642, -121.293119); Unnamed (48.657949, -121.279141); Unnamed (48.659526, -121.281845); Unnamed (48.659652, -121.284867).

(iii) Cascade River Watershed 1711000506. Outlet(s) = Cascade River (Lat 48.52147, Long -121.431469); upstream to endpoint(s) in: Boulder Creek (48.511828, -121.363515); Cascade River (48.422406, -121.124592); Clark Creek (48.519616, -121.404247); Found Creek (48.481464, -121.244895); Jordan Creek (48.479149, -121.396302); Kindy Creek (48.40346, -121.19997); North Fork Cascade River (48.46574, -121.165301); Sibley Creek (48.511764, -121.255306); Unnamed (48.516916, -121.369934); Unnamed (48.519853, -121.355352); Unnamed (48.522841, -121.416253); Unnamed (48.540716, -121.187277).

(iv) Skagit River/illabot Creek Watershed 1711000507. Outlet(s) = Skagit River (Lat 48.533888, Long -121.736697); upstream to endpoint(s) in: Aldon Creek (48.490787, -121.655981); Barr Creek (48.494766, -121.553562); Cascade River (48.52147, -121.431469); Corkindale Creek (48.523793, -121.481226); Illabot Creek (48.420072, -121.375128); Jackman Creek (48.52921, -121.696976); Mcleod Slough (48.478113, -121.628016); Miller Creek (48.483633, -121.657553); Olson Creek (48.554876, -121.448159); Rocky Creek (48.507094, -121.497771); Sauk River (48.48173, -121.607129); Skagit River (48.522186, -121.431634); Sutter Creek (48.495127, -121.549745); Unnamed (48.471463, -121.542227); Unnamed (48.485698, -121.594461); Unnamed (48.487325, -121.545692); Unnamed (48.487425, -121.533453); Unnamed (48.501107, -121.661145).

(v) Baker River Watershed 1711000508. Outlet(s) = Baker River (Lat 48.533879, Long -121.736713); upstream to endpoint(s) in: Baker River (48.820068, -121.428469); Bald Eagle Creek (48.786682, -121.426929); Blum Creek (48.753095, -121.54535); Little Sandy Creek (48.704049, -121.698077); Morovitz Creek (48.745746, -121.677314); Park Creek (48.74079, -121.681977); Pass Creek (48.814934, -121.463275); Rocky Creek (48.645389, -121.707383);



Skagit River (48.533888, -121.736697); Swift Creek (48.753261, -121.65719); Unnamed (48.734467, -121.636766).

(4) Sauk Subbasin 17110006—(i) Upper Sauk River Watershed 1711000601. Outlet(s) = Sauk River (Lat 48.173216, Long -121.472863); upstream to endpoint(s) in: Bedal Creek (48.079796, -121.392862); Black Oak Creek (48.178866, -121.45057); Camp Creek (48.150358, -121.280495); Chocwich Creek (48.072804, -121.399295); Crystal Creek (48.182984, -121.360841); Dead Duck Creek (48.179803, -121.373501); Elliott Creek (48.055379, -121.415773); Falls Creek (48.136819, -121.432256); Martin Creek (48.091595, -121.402576); North Fork Sauk River (48.096, -121.372171); Owl Creek (48.162177, -121.295991); Peek-A-Boo Creek (48.149748, -121.441535); South Fork Sauk River (47.986322, -121.393336); Stujack Creek (48.176825, -121.392682); Swift Creek (48.099536, -121.40116); Unnamed (48.117404, -121.416221); Unnamed (48.164324, -121.447051); Unnamed (48.165143, -121.33003); Weden Creek (47.986316, -121.44378); White Chuck River (48.09948, -121.182565).

(ii) Upper Suiattle River Watershed 1711000602. Outlet(s) = Suiattle River (48.258351, -121.224572); upstream to endpoint(s) in: Downey Creek (48.28262, -121.209548); Suiattle River (48.210571, -121.088734); Sulphur Creek (48.256889, -121.174591).

(iii) Lower Suiattle River Watershed 1711000603. Outlet(s) = Suiattle River (Lat 48.335583, Long -121.547106); upstream to endpoint(s) in: All Creek (48.288401, -121.429156); Big Creek (48.343084, -121.441273); Black Creek (48.258382, -121.402801); Buck Creek (48.275388, -121.327822); Captain Creek (48.258384, -121.276479); Circle Creek (48.257783, -121.339964); Conrad Creek (48.276814, -121.414421); Harriet Creek (48.24803, -121.30351); Lime Creek (48.244288, -121.294507); Suiattle River (48.258351, -121.224572); Tenas Creek (48.336889, -121.431586); Unnamed (48.268285, -121.347595); Unnamed (48.2897, -121.432205); Unnamed (48.295835, -121.432122); Unnamed (48.303544, -121.423863).

(iv) Lower Sauk River Watershed 1711000604. Outlet(s) = Mcleod Slough (Lat 48.478113, Long -121.628016); Sauk River (48.48173, -121.607129); upstream to endpoint(s) in: Clear Creek (48.202408, -121.569295); Dan Creek (48.265631, -121.540646); Dutch Creek (48.179125, -121.486809); Everett Creek (48.283836, -121.526243); Goodman Creek (48.185225, -121.499311); Hilt Creek (48.440932, -121.573433); Murphy Creek (48.183863, -121.523654); Rinker Creek (48.395207, -121.583449); Sauk River (48.173216, -121.472863); Suiattle River (48.335583, -121.547106); Unnamed (48.235207, -121.590179); Unnamed (48.282638, -121.530751); Unnamed (48.286653, -121.524888); Unnamed (48.305253, -121.545097); Unnamed (48.439232, -121.616077); White Creek (48.403202, -121.537828).

(5) Lower Skagit Subbasin 17110007—(i) Middle Skagit River/Finney Creek Watershed 1711000701. Outlet(s) = Skagit River (Lat 48.488951, Long -122.217614); upstream to endpoint(s) in: Alder Creek (48.552575, -121.932183); Boyd Creek (48.504855, -121.892273); Childs Creek (48.536412, -122.080267); Coal Creek (48.533942, -122.153196); Cumberland Creek (48.510468, -121.993332); Day Creek (48.406901, -121.97766); Finney Creek (48.465302, -121.687051); Gilligan Creek (48.48009, -122.130644); Grandy Creek (48.561171, -121.818094); Hansen Creek (48.559859, -122.208046); Jones Creek (48.558032, -122.046527); Loretta Creek (48.492814, -122.018527); Marietta Creek (48.511246, -121.930245); Mill Creek (48.500192, -121.873597); Muddy Creek (48.545767, -121.985109); O Toole Creek (48.508466, -121.919329); Pressentin Creek (48.509721, -121.846156); Quartz Creek (48.50301, -121.788233); Red Cabin Creek (48.552388, -122.016014); Skagit River (48.533385, -121.737928); Sorenson Creek (48.488763, -122.104541); Unnamed (48.480893, -122.141637); Unnamed (48.489945, -122.098925); Unnamed (48.495815, -121.753486); Unnamed (48.506371, -122.061784); Unnamed (48.509168, -122.104561); Unnamed (48.514861, -122.118166); Unnamed (48.528239, -122.166675); Unnamed (48.528601, -122.102507); Unnamed (48.535185, -122.087068); Unnamed (48.536394, -122.085423); Unnamed

(48.537986, -122.186437); Unnamed (48.542105, -122.059915); Unnamed (48.547274, -122.185153); Unnamed (48.547956, -122.187094); Unnamed (48.548129, -121.954555); Unnamed (48.550762, -122.195456); Unnamed (48.552902, -121.959069); Unnamed (48.558115, -122.198368); Unnamed (48.558227, -121.99464); Unnamed (48.561171, -121.818094); Unnamed (48.562984, -121.811731); Unnamed (48.55177, -122.204332); Wiseman Creek (48.532064, -122.135004).

(ii) Lower Skagit River/Nookachamps Creek Watershed 1711000702. Outlet(s) = Freshwater Slough (Lat 48.310713, Long -122.389592); North Fork Skagit River (48.362362, -122.470128); South Fork Skagit River (48.291833, -122.368233); upstream to endpoint(s) in: Britt Slough (48.393312, -122.358366); Carpenter Creek (48.394245, -122.277339); East Fork Nookachamps Creek (48.404247, -122.180275); Fisher Creek (48.30521, -122.296248); Lake Creek (48.324016, -122.224344); Skagit River (48.488951, -122.217614); Turner Creek (48.447398, -122.195845); Unnamed (48.358837, -122.422683); Unnamed (48.366754, -122.41293); Unnamed (48.43207, -122.314617); Unnamed (48.380192, -122.17967); Walker Creek (48.375354, -122.176074).

(6) Stillaguamish Subbasin 17110008—(i) North Fork Stillaguamish River Watershed 1711000801. Outlet(s) = North Fork Stillaguamish River (Lat 48.203615, Long -122.126717); upstream to endpoint(s) in: Boulder River (48.245122, -121.828242); Brooks Creek (48.289564, -121.906883); Deer Creek (48.364935, -121.794539); Deforest Creek (48.393279, -121.853014); Dicks Creek (48.300579, -121.836549); French Creek (48.239427, -121.774131); Fry Creek (48.256369, -121.897103); Furland Creek (48.25189, -121.699139); Grant Creek (48.295612, -122.031716); Hell Creek (48.252119, -121.964447); Higgins Creek (48.329407, -121.791932); Little Deer Creek (48.431748, -121.938181); Montague Creek (48.250887, -121.867164); Moose Creek (48.253373, -121.710713); North Fork Stillaguamish River (48.296662, -121.636091); Rick Creek (48.349662, -121.899994); Rock Creek (48.272543, -122.09922); Rollins Creek

(48.292951, -121.851904); Segelsen Creek (48.301774, -121.705063); Snow Gulch (48.241837, -121.688972); Squire Creek (48.201836, -121.630783); Unnamed (48.225817, -122.090659); Unnamed (48.23139, -122.079834); Unnamed (48.236267, -121.625132); Unnamed (48.236753, -122.051497); Unnamed (48.243945, -121.64302); Unnamed (48.24766, -122.036676); Unnamed (48.252573, -122.029955); Unnamed (48.255611, -121.714995); Unnamed (48.256057, -122.095346); Unnamed (48.256367, -121.939918); Unnamed (48.256695, -122.025848); Unnamed (48.257104, -121.90825); Unnamed (48.258393, -122.05691); Unnamed (48.258869, -121.764439); Unnamed (48.259213, -121.70866); Unnamed (48.263641, -121.763092); Unnamed (48.264861, -121.758039); Unnamed (48.265601, -122.004059); Unnamed (48.267786, -122.043722); Unnamed (48.268038, -121.715334); Unnamed (48.272044, -121.726641); Unnamed (48.27601, -121.935088); Unnamed (48.277489, -122.036087); Unnamed (48.27989, -121.990779); Unnamed (48.281081, -121.995266); Unnamed (48.281713, -121.649707); Unnamed (48.283383, -121.683334); Unnamed (48.28395, -121.646562); Unnamed (48.284296, -121.658284); Unnamed (48.28446, -121.920135); Unnamed (48.285216, -121.62783); Unnamed (48.2891, -121.769358); Unnamed (48.289217, -121.680426); Unnamed (48.289395, -121.755674); Unnamed (48.289507, -121.702145); Unnamed (48.290513, -121.743771); Unnamed (48.290671, -121.721475); Unnamed (48.290801, -121.746827); Unnamed (48.291004, -121.691566); Unnamed (48.291597, -121.693818); Unnamed (48.294273, -121.732756); Unnamed (48.294703, -121.826142); Unnamed (48.294855, -121.94067); Unnamed (48.295803, -121.789706); Unnamed (48.296128, -121.825352); Unnamed (48.297676, -121.802133); Unnamed (48.319239, -121.964661); Unnamed (48.359397, -121.920923); Unnamed (48.361324, -121.93455); Unnamed (48.365655, -121.915496); Unnamed (48.366918, -121.941311); Unnamed (48.367183, -121.958052); Unnamed (48.367255, -121.956483); Unnamed (48.367469, -121.95337); Unnamed (48.370765, -121.89953); Unnamed (48.371334, -121.834956); Unnamed (48.372057, -121.893537);

Unnamed (48.37667, -121.887195); Unnamed (48.384027, -121.879147); Unnamed (48.410307, -121.91761); Unnamed (48.297464, -121.81382); Unnamed (48.321184, -121.95493).

(ii) South Fork Stillaguamish River Watershed 1711000802. Outlet(s) = North Fork Stillaguamish River (Lat 48.203615, Long -122.126716); South Fork Stillaguamish River (48.203615, -122.126717); upstream to endpoint(s) in: Bear Creek (48.064612, -121.729061); Bear Creek (48.184588, -122.027434); Beaver Creek (48.088637, -121.513947); Bender Creek (48.066866, -121.589809); Benson Creek (48.10167, -121.738611); Blackjack Creek (48.051331, -121.624223); Boardman Creek (48.04009, -121.674988); Buck Creek (48.051042, -121.469806); Coal Creek (48.093827, -121.535554); Cranberry Creek (48.121886, -121.803277); Cub Creek (48.211009, -121.940174); Deer Creek (48.094863, -121.554797); Eldredge Creek (48.074512, -121.637347); Gordon Creek (48.086169, -121.660042); Hawthorn Creek (48.078912, -121.8082); Heather Creek (48.086826, -121.782066); Hempel Creek (48.075711, -121.743146); Jim Creek (48.209443, -121.929313); Mallardy Creek (48.067197, -121.657137); Marten Creek (48.079769, -121.613497); North Fork Canyon Creek (48.17598, -121.82868); Palmer Creek (48.0427, -121.474893); Perry Creek (48.077976, -121.482351); Rotary Creek (48.092322, -121.828833); Schweitzer Creek (48.06862, -121.69012); Siberia Creek (48.174184, -122.039681); South Fork Canyon Creek (48.153787, -121.785021); South Fork Stillaguamish River (48.028261, -121.483458); Triple Creek (48.077106, -121.798123); Turlo Creek (48.108542, -121.764124); Twentytwo Creek (48.075825, -121.758819); Unnamed (48.047402, -121.505486); Unnamed (48.05552, -121.520966); Unnamed (48.075811, -121.563225); Unnamed (48.077807, -121.591337); Unnamed (48.080052, -121.580689); Unnamed (48.082802, -121.695828); Unnamed (48.084671, -121.683128); Unnamed (48.090013, -121.877766); Unnamed (48.091037, -121.815954); Unnamed (48.094741, -121.861679); Unnamed (48.100032, -121.796066); Unnamed (48.102487, -121.760967); Unnamed (48.106381, -121.783693); Unnamed (48.107979, -121.790154); Unnamed (48.110592, -

121.795323); Unnamed (48.11262, -121.80435); Unnamed (48.117007, -121.82596); Unnamed (48.118957, -121.83034); Unnamed (48.125862, -122.006135); Unnamed (48.131466, -121.905515); Unnamed (48.131881, -121.883717); Unnamed (48.134683, -121.938153); Unnamed (48.139202, -122.040321); Unnamed (48.140702, -121.932885); Unnamed (48.141896, -121.932379); Unnamed (48.143639, -121.932372); Unnamed (48.14431, -121.924623); Unnamed (48.14619, -122.017379); Unnamed (48.151471, -122.062372); Unnamed (48.19464, -122.074897); Unnamed (48.199265, -122.091343); Unnamed (48.212118, -121.923782); Unnamed (48.21329, -122.028497); Unnamed (48.216753, -122.005396); Unnamed (48.219125, -121.989143); Unnamed (48.219724, -121.994297); Unnamed (48.224672, -121.975855); Unnamed (48.227563, -121.937492); Unnamed (48.233562, -121.953975); Wiley Creek (48.092015, -121.720605); Wisconsin Creek (48.068182, -121.719162).

(iii) Lower Stillaguamish River Watershed 1711000803. Outlet(s) = Hat Slough (Lat 48.198102, Long -122.359125); Stillaguamish River (48.238335, -122.376115); upstream to endpoint(s) in: Church Creek (48.26413, -122.283181); Freedom Creek (48.271454, -122.314228); Harvey Creek (48.233538, -122.128366); Jackson Gulch (48.210323, -122.241546); North Fork Stillaguamish River (48.203615, -122.126716); Pilchuck Creek (48.317396, -122.149205); Portage Creek (48.178785, -122.182919); Stillaguamish River (48.203562, -122.126899); Unnamed (48.171029, -122.260136); Unnamed (48.186672, -122.277088); Unnamed (48.195788, -122.283335); Unnamed (48.195835, -122.168612); Unnamed (48.196884, -122.166822); Unnamed (48.20183, -122.295689); Unnamed (48.203545, -122.315975); Unnamed (48.203747, -122.19962); Unnamed (48.214373, -122.151954); Unnamed (48.224202, -122.14526); Unnamed (48.227416, -122.199181); Unnamed (48.232175, -122.226793); Unnamed (48.23644, -122.226298); Unnamed (48.240242, -122.207791); Unnamed (48.241888, -122.201199); Unnamed (48.251066, -122.202687); Unnamed

(48.256206, -122.197528); Unnamed (48.262756, -122.185006); Unnamed (48.271258, -122.316101); Unnamed (48.281636, -122.206013); Unnamed (48.300059, -122.213286); Unnamed (48.303378, -122.161323).

(7) Skykomish Subbasin 17110009—(i) Tye And Beckler Rivers Watershed 1711000901. Outlet(s) = Beckler River (Lat 47.715467, Long -121.341085); South Fork Skykomish River (47.71526, -121.339458); upstream to endpoint(s) in: Alpine Creek (47.70063, -121.253227); Beckler River (47.86115, -121.306314); East Fork Foss River (47.648892, -121.276727); Rapid River (47.819406, -121.237866); Tye River (47.717046, -121.226571); West Fork Foss River (47.627377, -121.310419).

(ii) Skykomish River Forks Watershed 1711000902. Outlet(s) = North Fork Skykomish River (Lat 47.813603, Long -121.577995); South Fork Skykomish River (47.812617, -121.577943); upstream to endpoint(s) in: Barclay Creek (47.791478, -121.48993); Bear Creek (47.889803, -121.382157); Beckler River (47.715467, -121.341085); Bitter Creek (47.841172, -121.50341); Bridal Veil Creek (47.798538, -121.56095); East Fork Miller River (47.648482, -121.373599); Excelsior Creek (47.869782, -121.486781); Goblin Creek (47.925037, -121.311518); Index Creek (47.759736, -121.496132); Kimball Creek (47.701302, -121.431138); Lewis Creek (47.81892, -121.505851); Maloney Creek (47.704343, -121.354423); Money Creek (47.707177, -121.442116); North Fork Skykomish River (47.920573, -121.303744); Salmon Creek (47.904002, -121.467022); Silver Creek (47.940366, -121.437503); Snowslide Gulch (47.857696, -121.508333); South Fork Skykomish River (47.71526, -121.339458); Troublesome Creek (47.899315, -121.400435); Trout Creek (47.832847, -121.433624); West Cady Creek (47.897548, -121.305775); West Fork Miller River (47.665692, -121.400066).

(iii) Skykomish River/wallace River Watershed 1711000903. Outlet(s) = Mccoy Creek (Lat 47.847628, Long -121.824315); Skykomish River (47.860377, -121.819105); Unnamed (47.855571, -121.819268); upstream to endpoint(s) in: Anderson Creek (47.8044, -121.596583);

Deer Creek (47.818891, -121.581685); Duffey Creek (47.833436, -121.689636); Hogarty Creek (47.842003, -121.612106); May Creek (47.856805, -121.632414); McCoy Creek (47.831308, -121.826994); North Fork Skykomish River (47.813603, -121.577995); North Fork Wallace River (47.879351, -121.659897); Olney Creek (47.879416, -121.717566); Proctor Creek (47.816171, -121.652091); South Fork Skykomish River (47.812617, -121.577943); Unnamed (47.823821, -121.641583); Unnamed (47.854927, -121.788254); Unnamed (47.857101, -121.75812); Unnamed (47.858007, -121.797344); Unnamed (47.860413, -121.635072); Unnamed (47.84923, -121.784034); Unnamed (47.855893, -121.752873); Wagleys Creek (47.873165, -121.773098); Wallace River (47.877046, -121.645838).

(iv) Sultan River Watershed 1711000904. Outlet(s) = Sultan River (Lat 47.861005, Long -121.820933); upstream to endpoint(s) in: Sultan River (47.959618, -121.796288); Unnamed (47.887034, -121.829974).

(v) Skykomish River/Woods Creek Watershed 1711000905. Outlet(s) = Skykomish River (Lat 47.829872, Long -122.045091); upstream to endpoint(s) in: Barr Creek (Lat 47.829715, -121.905589); Carpenter Creek (48.015168, -121.930236); Elwell Creek (47.803646, -121.853672); Foye Creek (47.822602, -121.970674); High Rock Creek (47.837811, -121.959755); McCoy Creek (47.847628, -121.824315); Richardson Creek (47.886315, -121.943935); Riley Slough (47.844202, -121.936904); Skykomish River (47.847403, -121.886481); Skykomish River (47.852292, -121.878907); Skykomish River (47.854738, -121.82681); Sorgenfrei Creek (47.961588, -121.934368); Sultan River (47.861005, -121.820933); Unnamed (47.818865, -122.005592); Unnamed (47.81969, -122.00526); Unnamed (47.829214, -121.844279); Unnamed (47.855571, -121.819268); Unnamed (47.88559, -121.921368); Unnamed (47.828244, -122.013516); Unnamed (47.834405, -122.016728); Unnamed (47.834695, -122.021191); Unnamed (47.836191, -121.980947); Unnamed (47.839322, -121.952037); Unnamed (47.839419, -121.843256); Unnamed (47.842963, -



121.90049); Unnamed (47.844848, -121.889155); Unnamed (47.851422, -121.852499); Unnamed (47.853708, -121.907276); Unnamed (47.853713, -121.91338); Unnamed (47.857546, -121.830245); West Fork Woods Creek (47.983648, -121.957293); Woods Creek (47.895095, -121.875437); Youngs Creek (47.807915, -121.83447).

(8) Snoqualmie Subbasin 17110010—(i) Middle Fork Snoqualmie River Watershed 1711001003. Outlet(s) = Langlois Creek (Lat 47.635728, Long -121.90751); Snoqualmie River (47.640786, -121.927225); upstream to endpoint(s) in: Canyon Creek (47.568828, -121.981984); East Fork Griffin Creek (47.667678, -121.79524); Griffin Creek (47.679643, -121.802134); Lake Creek (47.506498, -121.871475); Langlois Creek (47.632423, -121.900585); Langlois Creek (47.63436, -121.910479); Patterson Creek (47.643294, -122.008601); Raging River (47.443286, -121.841753); Snoqualmie River (47.54132, -121.837391); Tokul Creek (47.556115, -121.829753); Unnamed (47.435758, -121.840802); Unnamed (47.469131, -121.887371); Unnamed (47.552211, -121.892074); Unnamed (47.55902, -121.959053); Unnamed (47.594862, -121.869153); Unnamed (47.602188, -121.86105); Unnamed (47.611929, -121.844129); Unnamed (47.617761, -121.987517); Unnamed (47.620823, -121.818809); Unnamed (47.67586, -121.821881); Unnamed (47.550625, -121.860269); Unnamed (47.573184, -121.882046); Unnamed (47.574562, -121.935597); Unnamed (47.574643, -121.923532); Unnamed (47.575296, -121.934856); Unnamed (47.575302, -121.928863); Unnamed (47.577661, -121.922239); Unnamed (47.580744, -121.89107); Unnamed (47.604032, -121.909863); Unnamed (47.60579, -121.908524); Unnamed (47.611586, -121.940718); Unnamed (47.61275, -121.923865); Unnamed (47.619886, -121.913184); Unnamed (47.624753, -121.913661).

(ii) Lower Snoqualmie River Watershed 1711001004. Outlet(s) = Snohomish River (47.832905, -122.05029); Unnamed (47.818865, -122.005592); upstream to endpoint(s) in: Adair Creek (47.713532, -122.00603); Cherry Creek (47.763031, -121.881467); Langlois Creek (47.635728, -121.90751); Margaret Creek (47.754562, -121.894491); North Fork Cherry Creek

(47.747274, -121.922417); North Fork Creek (47.709704, -121.813858); Pearson Eddy Creek  
 (47.7629, -121.993362); Peoples Creek (47.797003, -121.969785); Snoqualmie River  
 (47.640786, -121.927225); South Fork Tolt River (47.692382, -121.690691); Stossel Creek  
 (47.760057, -121.854479); Tolt River (47.639682, -121.925064); Tuck Creek (47.760138, -  
 122.029513); Unnamed (47.66549, -121.969734); Unnamed (47.688103, -121.841747);  
 Unnamed (47.697681, -121.877351); Unnamed (47.699359, -121.72867); Unnamed (47.711538,  
 -121.835344); Unnamed (47.718309, -121.778212); Unnamed (47.719516, -121.683676);  
 Unnamed (47.721128, -121.842676); Unnamed (47.721491, -121.711688); Unnamed (47.72187,  
 -121.872933); Unnamed (47.639628, -121.916512); Unnamed (47.644835, -121.876373);  
 Unnamed (47.652724, -121.927754); Unnamed (47.653832, -121.900784); Unnamed  
 (47.663562, -121.912794); Unnamed (47.666377, -121.921884); Unnamed (47.66645, -  
 121.968042); Unnamed (47.671854, -121.944823); Unnamed (47.6722, -121.934103); Unnamed  
 (47.672893, -121.963119); Unnamed (47.673234, -121.906003); Unnamed (47.68202, -  
 121.984816); Unnamed (47.683549, -121.985897); Unnamed (47.685397, -121.98674);  
 Unnamed (47.688482, -121.942011); Unnamed (47.691215, -121.959693); Unnamed  
 (47.691787, -121.975697); Unnamed (47.694662, -121.994754); Unnamed (47.701955, -  
 121.998995); Unnamed (47.704253, -122.001792); Unnamed (47.709025, -122.004767);  
 Unnamed (47.709854, -121.98468); Unnamed (47.716945, -122.001237); Unnamed (47.721749,  
 -121.989604); Unnamed (47.722623, -121.987303); Unnamed (47.723963, -121.996696);  
 Unnamed (47.726844, -121.989954); Unnamed (47.733263, -122.010612); Unnamed  
 (47.733962, -121.989698); Unnamed (47.734647, -122.013111); Unnamed (47.736303, -  
 122.013677); Unnamed (47.736874, -121.98844); Unnamed (47.741838, -122.009593);  
 Unnamed (47.744396, -121.949708); Unnamed (47.745593, -121.952919); Unnamed  
 (47.745918, -121.954099); Unnamed (47.747444, -122.005028); Unnamed (47.747524, -  
 121.957434); Unnamed (47.747678, -121.996583); Unnamed (47.74965, -121.977289);

Unnamed (47.750208, -121.96435); Unnamed (47.750524, -121.965961); Unnamed (47.75188, -121.927084); Unnamed (47.752108, -121.969501); Unnamed (47.752268, -122.004156); Unnamed (47.75256, -121.964546); Unnamed (47.752757, -121.969499); Unnamed (47.752947, -121.957481); Unnamed (47.753339, -121.969357); Unnamed (47.754942, -121.97775); Unnamed (47.756436, -122.004367); Unnamed (47.758452, -122.002775); Unnamed (47.761886, -122.000354); Unnamed (47.762689, -121.991876); Unnamed (47.762853, -121.977877); Unnamed (47.767489, -122.000623); Unnamed (47.775507, -121.995614); Unnamed (47.775755, -121.99995); Unnamed (47.776255, -121.999798); Unnamed (47.779073, -121.991757); Unnamed (47.782249, -121.966177); Unnamed (47.788539, -122.000183); Unnamed (47.797789, -121.978354); Unnamed (47.801619, -121.981418); Unnamed (47.815259, -121.976869); Unnamed (47.815443, -121.99813); Unnamed (47.818865, -122.005592).

(9) Snohomish Subbasin 17110011—(i) Pilchuck River Watershed 1711001101.

Outlet(s) = French Creek (Lat 47.888547, Long -122.087439); Pilchuck River (47.900972, -122.092133); upstream to endpoint(s) in: Boulder Creek (48.024989, -121.811255); Catherine Creek (48.033209, -122.077074); Dubuque Creek (47.996688, -122.010406); French Creek (47.898794, -122.057083); Kelly Creek (48.035392, -121.830635); Little Pilchuck Creek (48.112494, -122.060843); Miller Creek (47.996242, -121.781617); Pilchuck River (47.991273, -121.736285); Purdy Creek (48.008866, -121.892703); Unnamed (47.946107, -122.078197); Unnamed (47.981529, -122.022251); Unnamed (48.014987, -122.065111); Unnamed (48.050521, -121.960436); Unnamed (48.052319, -121.873027); Unnamed (48.056823, -121.920701); Unnamed (47.893981, -122.064909); Unnamed (47.90029, -122.055264); Unnamed (47.900781, -122.071709); Unnamed (47.902216, -122.060278); Unnamed (47.909758, -122.055179); Unnamed (47.91308, -122.079588); Unnamed (47.91411, -122.073471); Wilson Creek (48.007178, -121.772124).

(ii) Snohomish River Watershed 1711001102. Outlet(s) = Quilceda Creek (48.045077, -122.207633); Snohomish River (48.020024, -122.199952); Steamboat Slough (48.035252, -122.187716); Union Slough (48.033026, -122.187941); Unnamed (48.042687, -122.203304); upstream to endpoint(s) in: Allen Creek (48.060189, -122.155845); Anderson Creek (47.823494, -122.063169); Batt Slough (47.893752, -122.101932); Burri Creek (47.996254, -122.12825); Ebey Slough (47.942077, -122.172019); Elliott Creek (47.832096, -122.058076); Evans Creek (47.837998, -122.084366); French Creek (47.905702, -122.006538); Lake Beecher (47.853003, -122.08659); Larimer Creek (47.889935, -122.141659); Quilceda Creek (48.126701, -122.136538); Snohomish River (47.845642, -122.066164); Swan Trail Slough (47.924299, -122.144247); Thomas Creek (47.885779, -122.133759); Unnamed (47.89605, -122.024132); Unnamed (47.874632, -122.06789); Unnamed (47.878911, -122.062819); Unnamed (47.883214, -122.075259); Unnamed (47.883685, -122.064291); Unnamed (47.977505, -122.164439); Unnamed (47.989661, -122.153303); Unnamed (47.989986, -122.157628); Unnamed (47.992902, -122.153788); Unnamed (47.994226, -122.155257); Unnamed (47.999821, -122.157617); Unnamed (47.999833, -122.154307); Unnamed (48.000441, -122.160006); Unnamed (48.131795, -122.131717); Unnamed (47.826251, -122.063007); Unnamed (47.839617, -122.088583); Unnamed (47.842605, -122.060737); Unnamed (47.842773, -122.09302); Unnamed (47.845642, -122.066164); Unnamed (47.845758, -122.092344); Unnamed (47.846844, -122.064563); Unnamed (47.851113, -122.010167); Unnamed (47.852079, -122.018572); Unnamed (47.861172, -122.029372); Unnamed (47.864352, -122.091793); Unnamed (47.868184, -122.033887); Unnamed (47.868667, -122.071745); Unnamed (47.871627, -122.007148); Unnamed (47.872067, -122.012574); Unnamed (47.872807, -122.007458); Unnamed (47.872892, -122.020313); Unnamed (47.873683, -122.02625); Unnamed (47.873838, -122.023394); Unnamed (47.873972, -122.020824); Unnamed (47.873974, -122.018382); Unnamed (47.874621, -122.033932); Unnamed (47.87602,

-122.018838); Unnamed (47.876587, -122.038858); Unnamed (47.877086, -122.10383);  
Unnamed (47.878155, -122.093306); Unnamed (47.878365, -122.047458); Unnamed  
(47.879616, -122.121293); Unnamed (47.880169, -122.120704); Unnamed (47.880744, -  
122.124328); Unnamed (47.880801, -122.115079); Unnamed (47.881683, -122.018106);  
Unnamed (47.882464, -122.049811); Unnamed (47.88295, -122.036805); Unnamed (47.883214,  
-122.128361); Unnamed (47.887449, -122.136266); Unnamed (47.887628, -122.115244);  
Unnamed (47.889292, -122.138508); Unnamed (47.889733, -122.139749); Unnamed  
(47.889949, -122.045002); Unnamed (47.891627, -122.052284); Unnamed (47.893918, -  
122.1473); Unnamed (47.893921, -122.15179); Unnamed (47.900751, -122.162699); Unnamed  
(47.901957, -122.165281); Unnamed (47.903224, -122.152517); Unnamed (47.905749, -  
122.171392); Unnamed (47.906952, -122.1713); Unnamed (47.909784, -122.174177); Unnamed  
(47.917745, -122.179549); Unnamed (47.91785, -122.170724); Unnamed (47.917965, -  
122.176424); Unnamed (47.918881, -122.166131); Unnamed (47.919953, -122.159256);  
Unnamed (47.920163, -122.112239); Unnamed (47.922557, -122.152328); Unnamed  
(47.926219, -122.164369); Unnamed (47.927044, -122.187844); Unnamed (47.927115, -  
122.181581); Unnamed (47.928771, -122.182785); Unnamed (47.929155, -122.1575); Unnamed  
(47.9292, -122.16225); Unnamed (47.931447, -122.155867); Unnamed (47.935459, -  
122.190942); Unnamed (47.935975, -122.19135); Unnamed (47.936814, -122.170221);  
Unnamed (47.939084, -122.174422); Unnamed (47.939185, -122.192305); Unnamed  
(47.939694, -122.150153); Unnamed (47.940939, -122.155435); Unnamed (47.940947, -  
122.157858); Unnamed (47.94244, -122.157373); Unnamed (47.942726, -122.17536); Unnamed  
(47.945442, -122.192582); Unnamed (47.94649, -122.146106); Unnamed (47.946592, -  
122.146917); Unnamed (47.947975, -122.179796); Unnamed (47.949211, -122.139884);  
Unnamed (47.949321, -122.159191); Unnamed (47.949477, -122.132724); Unnamed  
(47.949525, -122.141519); Unnamed (47.954551, -122.127872); Unnamed (47.954673, -

122.126737); Unnamed (47.954755, -122.131233); Unnamed (47.955528, -122.131243);  
 Unnamed (47.956927, -122.19563); Unnamed (47.959917, -122.126245); Unnamed (47.960424,  
 -122.126126); Unnamed (47.960595, -122.12673); Unnamed (47.961773, -122.130148);  
 Unnamed (47.99053, -122.133921); Unnamed (48.001732, -122.129584); Unnamed (48.035728,  
 -122.158051); Unnamed (48.038525, -122.160828); Unnamed (48.039738, -122.153565);  
 Unnamed (48.041372, -122.151583); Unnamed (48.042963, -122.150051); Unnamed  
 (48.044102, -122.147735); Unnamed (48.047591, -122.150945); Unnamed (48.048094, -  
 122.159389); Weiser Creek (48.004603, -122.127993); West Fork Quilceda Creek (48.114329, -  
 122.192036); Wood Creek (47.925014, -122.184669); Wood Creek (47.946568, -122.177043).

(10) Lake Washington 17110012—(i) Cedar River 1711001201. Outlet(s) = Cedar River  
 (Lat 47.500458, Long -122.215889); upstream to endpoint(s) in: Cedar River (47.419017, -  
 121.781807); Madsen Creek (47.454959, -122.139271); Peterson Creek (47.421385, -  
 122.071428); Rock Creek (47.360983, -122.007166); Unnamed (47.412034, -122.005441);  
 Unnamed (47.397644, -122.015869); Walsh Lake Diversion Ditch (47.388412, -121.983268).

(11) Duwamish Subbasin 17110013—(i) Upper Green River Watershed 1711001301.  
 Outlet(s) = Green River (Lat 47.222773, Long -121.608297); Smay Creek (47.22558, -  
 121.608029); upstream to endpoint(s) in: Friday Creek (47.220272, -121.457068); Intake Creek  
 (47.205593, -121.406127); McCain Creek (47.209121, -121.530424); Sawmill Creek (47.208384,  
 -121.468737); Smay Creek (47.250466, -121.589199); Snow Creek (47.26089, -121.406133);  
 Sunday Creek (47.258566, -121.367101); Tacoma Creek (47.187342, -121.364175).

(ii) Middle Green River Watershed 1711001302. Outlet(s) = Green River (Lat 47.288124,  
 Long -121.97032); upstream to endpoint(s) in: Bear Creek (47.277192, -121.800206); Charley  
 Creek (47.259074, -121.779776); Cougar Creek (47.243692, -121.645414); Eagle Creek  
 (47.304949, -121.723086); Gale Creek (47.264201, -121.709713); Green River (47.222773, -

121.608297); Piling Creek (47.281819, -121.756524); Smay Creek (47.22558, -121.608029); Sylvester Creek (47.245565, -121.654863).

(iii) Lower Green River Watershed 1711001303. Outlet(s) = Duwamish Waterway (Lat 47.583483, Long -122.359684); Unnamed (47.588989, -122.34426); upstream to endpoint(s) in: Big Soos Creek (47.372078, -122.144432); Burns Creek (47.284679, -122.098961); Crisp Creek (47.289456, -122.059482); Cristy Creek (47.27092, -122.017489); Green River (47.288124, -121.97032); Jenkins Creek (47.37728, -122.080576); Little Soos Creek (47.378342, -122.106081); Mill Creek (47.303262, -122.272491); Newaukum Creek (47.229023, -121.954805); Rock Creek (47.310539, -122.024859); Unnamed (47.220884, -122.023242); Unnamed (47.220892, -122.016139); Unnamed (47.234075, -121.931801); Unnamed (47.325011, -122.200079); Unnamed (47.335135, -122.154992); Unnamed (47.353478, -122.258274); Unnamed (47.360321, -122.225589); Unnamed (47.374183, -122.103011); Unnamed (47.389595, -122.225993).

(12) Puyallup Subbasin 17110014—(i) Upper White River Watershed 1711001401. Outlet(s) = Greenwater River (Lat 47.158517, Long -121.659041); White River (47.158251, -121.659559); upstream to endpoint(s) in: George Creek (47.099306, -121.472868); Greenwater River (47.091025, -121.456044); Huckleberry Creek (47.053496, -121.616046); Pyramid Creek (47.113047, -121.455762); Twentyeight Mile Creek (47.060856, -121.511537); Unnamed (47.051445, -121.71716); Unnamed (47.12065, -121.554216); Unnamed (47.134311, -121.583518); West Fork White River (47.047717, -121.692719); Whistle Creek (47.118448, -121.489277); White River (47.01416, -121.529457); Wrong Creek (47.043096, -121.699618).

(ii) Lower White River Watershed 1711001402. Outlet(s) = White River (Lat 47.200025, Long -122.255912); upstream to endpoint(s) in: Boise Creek (47.195608, -121.947967); Camp Creek (47.147051, -121.703951); Canyon Creek (47.13331, -121.862029); Clearwater River (47.084983, -121.783524); Greenwater River (47.158517, -121.659041); Scatter Creek

(47.162429, -121.87438); Unnamed (47.222955, -122.097188); Unnamed (47.229087, -122.07162); Unnamed (47.233808, -122.109926); Unnamed (47.245631, -122.058795); Unnamed (47.247135, -122.22738); Unnamed (47.25371, -122.264826); Unnamed (47.261283, -122.13136); Unnamed (47.268104, -122.25123); Unnamed (47.238173, -122.223415); White River (47.158251, -121.659559).

(iii) Carbon River Watershed 1711001403. Outlet(s) = Carbon River (Lat 47.123651, Long -122.229222); upstream to endpoint(s) in: Carbon River (46.993075, -121.926834); Coplar Creek (47.072996, -122.167682); Gale Creek (47.086262, -122.015047); Page Creek (47.12503, -122.009401); South Fork South Prairie Creek (47.099283, -121.954505); Unnamed (47.096464, -122.141219); Unnamed (47.097218, -122.145432); Unnamed (47.141246, -122.058699); Voight Creek (47.077134, -122.131266); Wilkeson Creek (47.089113, -122.011371).

(iv) Upper Puyallup River Watershed 1711001404. Outlet(s) = Carbon River (Lat 47.130578, Long -122.232672); Puyallup River (47.130572, -122.232719); upstream to endpoint(s) in: Carbon River (47.123651, -122.229222); Fox Creek (47.012694, -122.183844); Kellog Creek (46.913785, -122.083644); Le Dout Creek (46.935374, -122.054579); Niesson Creek (46.88451, -122.032222); Ohop Creek (46.941896, -122.222784); Puyallup River (46.904305, -122.03511); Unnamed (46.901022, -122.053271); Unnamed (46.915301, -122.08532); Unnamed (47.033738, -122.183585); Unnamed (47.072524, -122.217752); Unnamed (47.077709, -122.21324).

(v) Lower Puyallup River Watershed 1711001405. Outlet(s) = Hylebos Creek (Lat 47.260936, Long -122.360296); Puyallup River (47.262018, -122.419738); Wapato Creek (47.254142, -122.376043); upstream to endpoint(s) in: Canyonfalls Creek (47.141497, -122.220946); Carbon River (47.130578, -122.232672); Clarks Creek (47.175558, -122.318004); Clarks Creek (47.214046, -122.341441); Fennel Creek (47.149294, -122.186141); Hylebos Creek (47.268092, -122.304897); Puyallup River (47.130572, -122.232719); Simons Creek (47.223614,



-122.306576); Swam Creek (47.198605, -122.392952); Unnamed (47.192643, -122.338319); Unnamed (47.212642, -122.362772); Unnamed (47.284933, -122.328406); West Hylebos Creek (47.28045, -122.319677); White River (47.200025, -122.255912).

(13) Nisqually Subbasin 17110015—(i) Mashel/Ohop Watershed 1711001502. Outlet(s) = Lackamas Creek (Lat 46.8589, Long -122.488209); Nisqually River (46.864078, -122.478318); Tobolton Creek (46.863143, -122.480177); upstream to endpoint(s) in: Beaver Creek (46.858889, -122.187968); Busy Wild Creek (46.797885, -122.041534); Little Mashel River (46.850176, -122.27362); Lynch Creek (46.879792, -122.275113); Mashel River (46.84805, -122.104803); Nisqually River (46.823001, -122.30402); Ohop Valley Creek (46.924846, -122.260991); Powell Creek (46.84388, -122.436634); Tanwax Creek (46.941782, -122.280108); Tobolton Creek (46.823649, -122.48512); Twentyfive Mile Creek (46.924778, -122.259359); Unnamed (46.832309, -122.528978); Unnamed (46.907314, -122.261798).

(ii) Lowland Watershed 1711001503. Outlet(s) = Mcallister Creek (Lat 47.086256, Long -122.72842); Nisqually River (47.098476, -122.698813); Red Salmon Creek (47.096419, -122.687018); upstream to endpoint(s) in: Horn Creek (46.917907, -122.464722); Lacamas Creek (46.974424, -122.477971); Lacamas Creek (47.008577, -122.53729); Lackamas Creek (46.8589, -122.488209); Mcallister Creek (47.029715, -122.724885); Muck Creek (47.024063, -122.333195); Murray Creek (46.978923, -122.494325); Nisqually River (46.864078, -122.478318); Red Salmon Creek (47.083089, -122.678869); South Creek (46.985228, -122.287693); Thompson Creek (46.953803, -122.63521); Tobolton Creek (46.863143, -122.480177); Unnamed (46.88276, -122.481929); Unnamed (46.92337, -122.522371); Unnamed (46.999957, -122.652251); Unnamed (47.034211, -122.674166); Unnamed (47.03749, -122.735619); Unnamed (47.083824, -122.682663); Yelm Creek (46.947774, -122.606162).

(14) Deschutes 17110016—(i) Deschutes River-Lake Lawrence 1711001601. Outlet(s) = Deschutes River (Lat 46.858414, -122.703615); upstream to endpoint(s) in: Deschutes River

(46.803719, -122.41723); Fall Creek (46.801851, -122.508518); Hull Creek (46.815628, -122.551688); Johnson Creek (46.771083, -122.424056); Mitchell Creek (46.764822, -122.520257); Pipeline Creek (46.815019, -122.557139); Thurston Creek (46.787177, -122.426181); Unnamed (46.776798, -122.456757); Unnamed (46.821012, -122.552051); Unnamed (46.825293, -122.597406).

(ii) Deschutes River-Capitol Lake 1711001602. Outlet(s) = Deschutes River (Lat 47.043613, Long -122.909102); upstream to endpoint(s) in: Deschutes River (46.858414, -122.703615); Unnamed (46.883422, -122.791346); Unnamed (46.885585, -122.765692); Unnamed (46.900133, -122.761883); Unnamed (46.920776, -122.814054).

(15) Skokomish Subbasin 17110017—(i) Skokomish River Watershed 1711001701. Outlet(s) = Skokomish River (Lat 47.354102, Long -123.113454); Unnamed (47.346915, -123.1288); upstream to endpoint(s) in: Aristine Creek (47.339036, -123.330797); Brown Creek (47.426884, -123.273846); Cedar Creek (47.438747, -123.412558); Church Creek (47.460295, -123.455165); Fir Creek (47.336146, -123.302908); Frigid Creek (47.378231, -123.241695); Gibbons Creek (47.401886, -123.237898); Harp Creek (47.403646, -123.307961); Kirkland Creek (47.31996, -123.290062); Le Bar Creek (47.42431, -123.321985); Mctaggert Creek (47.415308, -123.249773); Mussel Shell Creek (47.299392, -123.154163); North Fork Skokomish River (47.398124, -123.201673); Pine Creek (47.443201, -123.429394); Purdy Canyon (47.30192, -123.181551); Purdy Creek (47.304446, -123.188829); South Fork Skokomish River (47.490355, -123.460444); Unnamed (47.307518, -123.202431); Unnamed (47.309215, -123.151179); Unnamed (47.312777, -123.250097); Unnamed (47.314724, -123.179082); Unnamed (47.315244, -123.177395); Unnamed (47.317283, -123.233949); Unnamed (47.318056, -123.168869); Unnamed (47.319036, -123.198978); Unnamed (47.320262, -123.233188); Unnamed (47.321111, -123.168254); Unnamed (47.32192, -123.307559); Unnamed (47.32264, -123.166947); Unnamed (47.324298, -123.166032);

Unnamed (47.32618, -123.165265); Unnamed (47.327954, -123.1645); Unnamed (47.340589, -123.229732); Vance Creek (47.363339, -123.37747); Weaver Creek (47.309516, -123.23971).

(16) Hood Canal Subbasin 17110018—(i) Lower West Hood Canal Frontal Watershed 1711001802. Outlet(s) = Eagle Creek (Lat 47.484737, Long -123.077896); Finch Creek (47.406474, -123.13894); Fulton Creek (47.618077, -122.974895); Jorsted Creek (47.526147, -123.050128); Lilliwaup Creek (47.468701, -123.114852); Unnamed (47.457462, -123.112951); Unnamed (47.570832, -123.01278); upstream to endpoint(s) in: Eagle Creek (47.499033, -123.100927); Finch Creek (47.406575, -123.145463); Fulton Creek (47.628033, -122.985435); Jorsted Creek (47.52439, -123.066123); Lilliwaup Creek (47.470625, -123.116282); Unnamed (47.459167, -123.133047); Unnamed (47.57275, -123.020786).

(ii) Hamma Hamma River Watershed 1711001803. Outlet(s) = Hamma Hamma River (Lat 47.546939, Long -123.045218); upstream to endpoint(s) in: Hamma Hamma River (47.560258, -123.066043); North Fork John Creek (47.545766, -123.072377); South Fork John Creek (47.541154, -123.07576).

(iii) Duckabush River Watershed 1711001804. Outlet(s) = Duckabush River (Lat 47.650063, Long -122.936017); Unnamed (47.651985, -122.935914); upstream to endpoint(s) in: Duckabush River (47.683876, -123.069991); Unnamed (47.656559, -122.939617); Unnamed (47.658797, -122.946881); Unnamed (47.664171, -122.958939); Unnamed (47.665164, -122.971688).

(iv) Dosewallips River Watershed 1711001805. Outlet(s) = Dosewallips River (Lat 47.687868, Long -122.895799); upstream to endpoint(s) in: Dosewallips River (47.728734, -123.112328); Gamm Creek (47.740548, -123.064117); Rocky Brook (47.720965, -122.941729); Unnamed (47.703663, -122.942585); Unnamed (47.718461, -123.001437).

(v) Big Quilcene River Watershed 1711001806. Outlet(s) = Big Quilcene River (Lat 47.818629, Long -122.861797); upstream to endpoint(s) in: Big Quilcene River (47.776171, -122.936666).

(vi) Upper West Hood Canal Frontal Watershed 1711001807. Outlet(s) = Donovan Creek (Lat 47.827622, Long -122.858429); Indian George Creek (47.807881, -122.869227); Little Quilcene River (47.826459, -122.862109); Spencer Creek (47.745578, -122.875483); Tarboo Creek (47.860282, -122.813536); Thorndyke Creek (47.816713, -122.739675); Unnamed (47.69516, -122.807343); Unnamed (47.742597, -122.767326); Unnamed (47.780439, -122.865654); Unnamed (47.803054, -122.748043); Unnamed (47.809788, -122.791892); Unnamed (47.827807, -122.696476); Unnamed (47.870429, -122.693831); upstream to endpoint(s) in: Donovan Creek (47.852344, -122.859015); Indian George Creek (47.806041, -122.872191); Leland Creek (47.87993, -122.878552); Little Quilcene River (47.87162, -122.920887); Spencer Creek (47.757649, -122.895277); Tarboo Creek (47.917525, -122.825126); Unnamed (47.700468, -122.804836); Unnamed (47.745248, -122.772127); Unnamed (47.780486, -122.870015); Unnamed (47.817369, -122.763825); Unnamed (47.826301, -122.786512); Unnamed (47.845809, -122.709645); Unnamed (47.847797, -122.878694); Unnamed (47.857542, -122.837721); Unnamed (47.86785, -122.773687); Unnamed (47.871141, -122.795142); Unnamed (47.886493, -122.830585); Unnamed (47.888336, -122.801101); Unnamed (47.889882, -122.698239).

(vii) West Kitsap Watershed 1711001808. Outlet(s) = Anderson Creek (Lat 47.566784, Long -122.967625); Anderson Creek (47.665387, -122.757767); Big Beef Creek (47.651916, -122.783607); Boyce Creek (47.609223, -122.915305); Dewatto River (47.45363, -123.048642); Mission Creek (47.430736, -122.872828); Seabeck Creek (47.63558, -122.834296); Stavis Creek (47.625046, -122.872893); Tahuya River (47.376565, -123.038419); Union River (47.44818, -122.838076); Unnamed (47.453546, -123.048616); Unnamed (47.585137, -122.945064);

Unnamed (47.826269, -122.56367); upstream to endpoint(s) in: Anderson Creek (47.660179, -122.756351); Bear Creek (47.498732, -122.811755); Big Beef Creek (47.589887, -122.846319); Boyce Creek (47.609187, -122.914277); Mission Creek (47.499061, -122.850487); Seabeck Creek (47.623835, -122.838375); Stavis Creek (47.605496, -122.872936); Tin Mine Creek (47.577069, -122.829158); Union River (47.527109, -122.785967); Unnamed (47.416887, -122.999502); Unnamed (47.43499, -123.053793); Unnamed (47.438227, -123.043285); Unnamed (47.451055, -123.016346); Unnamed (47.451077, -122.914789); Unnamed (47.454548, -122.986648); Unnamed (47.457926, -122.82675); Unnamed (47.459434, -122.841199); Unnamed (47.461807, -122.986012); Unnamed (47.464136, -122.996728); Unnamed (47.471436, -123.026462); Unnamed (47.472953, -122.853144); Unnamed (47.473856, -122.98827); Unnamed (47.496903, -122.832756); Unnamed (47.499811, -122.959843); Unnamed (47.513538, -122.976821); Unnamed (47.518086, -122.944624); Unnamed (47.533867, -122.966128); Unnamed (47.556351, -122.93869); Unnamed (47.578134, -122.831814); Unnamed (47.578146, -122.944137); Unnamed (47.617962, -122.881294); Unnamed (47.823731, -122.557569).

(17) Puget Sound Subbasin 17110019—(i) Kennedy/Goldsborough Watershed 1711001900. Outlet(s) = Campbell Creek (Lat 47.222039, Long -123.025109); Cranberry Creek (47.262433, -123.015892); Deer Creek (47.259411, -123.009378); Goldsborough Creek (47.209541, -123.09519); Kennedy Creek (47.096767, -123.085708); Johns Creek (47.246105, -123.042959); Lynch Creek (47.152742, -123.052635); Malaney Creek (47.25142, -123.0197); Mill Creek (47.195478, -122.996269); Perry Creek (47.04923, -123.005168); Schneider Creek (47.091599, -123.075637); Shelton Creek (47.213868, -123.095177); Sherwood Creek (47.375171, -122.835464); Skookum Creek (47.127879, -123.088396); Uncle John Creek (47.223441, -123.028998); Unnamed (47.138813, -123.076426); Unnamed (47.348035, -123.073581); Unnamed (47.406636, -122.887438); Unnamed (47.43145, -122.848454);

Unnamed (47.378832, -122.974308); Unnamed (47.382516, -122.948722); upstream to endpoint(s) in: Campbell Creek (47.226397, -122.997893); Cranberry Creek (47.283615, -123.111755); Deer Creek (47.327279, -122.911546); Gosnell Creek (47.132634, -123.208108); Johns Creek (47.252177, -123.129051); Kamilche Creek (47.109481, -123.120016); Kennedy Creek (47.079184, -123.126612); Lynch Creek (47.16124, -123.063246); Malaney Creek (47.248952, -123.011342); North Fork Goldsborough Creek (47.226417, -123.221454); Perry Creek (47.053893, -123.021482); Rock Creek (47.173241, -123.200765); Schneider Creek (47.071686, -123.056453); Shelton Creek (47.22776, -123.11259); Shumocher Creek (47.31782, -122.992107); South Fork Goldsborough Creek (47.186447, -123.252006); Uncle John Creek (47.230245, -123.028211); Unnamed (47.081522, -123.102753); Unnamed (47.097705, -123.216015); Unnamed (47.100105, -123.216045); Unnamed (47.1455, -123.081178); Unnamed (47.149979, -123.116498); Unnamed (47.154715, -123.122654); Unnamed (47.182813, -123.154821); Unnamed (47.183317, -122.993257); Unnamed (47.187858, -123.166457); Unnamed (47.209485, -123.249564); Unnamed (47.223587, -122.981336); Unnamed (47.225845, -123.243846); Unnamed (47.226397, -122.997893); Unnamed (47.25604, -123.060758); Unnamed (47.293868, -123.03765); Unnamed (47.322265, -122.993083); Unnamed (47.345989, -123.087997); Unnamed (47.361619, -122.901294); Unnamed (47.36676, -122.866433); Unnamed (47.37043, -122.975612); Unnamed (47.378331, -122.84611); Unnamed (47.378994, -122.950338); Unnamed (47.385117, -122.898154); Unnamed (47.41665, -122.847985).

(ii) Puget Sound 1711001901. Outlet(s) = Anderson Creek (Lat 47.527851, Long -122.683072); Barker Creek (47.637847, -122.670114); Blackjack Creek (47.542244, -122.627229); Burley Creek (47.412304, -122.631424); Chico Creek (47.602679, -122.705419); Clear Creek (47.652349, -122.68632); Coulter Creek (47.406361, -122.819291); Crescent Valley (47.345209, -122.583101); Crouch Creek (47.652147, -122.62956); Curley Creek (47.523499, -

122.546087); Gorst Creek (47.527855, -122.697881); McCormick Creek (47.371692, -  
 122.624236); Minter Creek (47.371035, -122.702469); North Creek (47.337484, -122.592533);  
 Olalla Creek (47.425398, -122.551857); Purdy Creek (47.387232, -122.626582); Rocky Creek  
 (47.371062, -122.78137); Unnamed (47.538696, -122.65636); Unnamed (47.645936, -  
 122.69393); Unnamed (47.712429, -122.613727); Unnamed (47.717886, -122.656445);  
 Unnamed (47.750936, -122.649151); Unnamed (47.770208, -122.559178); upstream to  
 endpoint(s) in: Anderson Creek (47.505029, -122.69725); Barker Creek (47.647598, -  
 122.658222); Blackjack Creek (47.477097, -122.648962); Burley Creek (47.477671, -  
 122.616862); Clear Creek (47.685465, -122.684758); Coulter Creek (47.44497, -122.768147);  
 Crescent Valley (47.387661, -122.573475); Crouch Creek (47.652949, -122.636766); Curley  
 Creek (47.470853, -122.591807); Dickerson Creek (47.574216, -122.730548); Gorst Creek  
 (47.517739, -122.743902); Heins Creek (47.532474, -122.719281); Huge Creek (47.416967, -  
 122.697785); Kitsap Creek (47.565562, -122.705833); Lost Creek (47.580058, -122.772143);  
 McCormick Creek (47.360692, -122.616179); Minter Creek (47.417427, -122.68133); North  
 Creek (47.345176, -122.602062); Olalla Creek (47.458804, -122.575015); Parish Creek  
 (47.525007, -122.715043); Purdy Creek (47.424097, -122.601949); Rocky Creek (47.406815, -  
 122.784426); Salmonberry Creek (47.521201, -122.583691); Unnamed (47.375417, -  
 122.764465); Unnamed (47.407431, -122.816273); Unnamed (47.458461, -122.654176);  
 Unnamed (47.461146, -122.658942); Unnamed (47.508334, -122.678469); Unnamed  
 (47.647488, -122.631401); Unnamed (47.652615, -122.705727); Unnamed (47.655222, -  
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 122.618495); Unnamed (47.763767, -122.637787); Unnamed (47.809222, -122.537334);  
 Unnamed (47.80967, -122.532478); Wildcat Creek (47.599753, -122.761086).

(iii) Woodland Creek-McLane Creek Frontal 1711001902. Outlet(s) = McLane Creek (Lat 47.03475, Long -122.990395); Unnamed (47.095699, -122.94549); Woodard Creek (47.120914, -122.861775); Woodland Creek (47.092725, -122.823614); upstream to endpoint(s) in: McLane Creek (47.001481, -123.009329); Swift Creek (47.031622, -123.008267); Unnamed (47.028842, -122.985445); Unnamed (47.060468, -122.964496); Unnamed (47.071776, -122.827649); Woodard Creek (47.040784, -122.853709); Woodland Creek (47.034018, -122.781534);

(iv) Puget Sound-East Passage 1711001904. Outlet(s) = Christensen Creek (Lat 47.403038, Long -122.51902); Judd Creek (47.402315, -122.467989); Lunds Gulch (47.859951, -122.334873); Shingle Mill Creek (47.480286, -122.482557); Unnamed (47.646085, -122.567546); upstream to endpoint(s) in: Judd Creek (47.416852, -122.47661); Lunds Gulch (47.859132, -122.327183); Shingle Mill Creek (47.467927, -122.474433); Unnamed (47.40206, -122.512865); Unnamed (47.641478, -122.566998).

(v) Chambers Creek 1711001906. Outlet(s) = Chambers Creek (Lat 47.186966, Long -122.583739); upstream to endpoint(s) in: Chambers Creek (47.155756, -122.527739); Clover Creek (47.136455, -122.433679); Clover Creek (47.155756, -122.527739); Flett Creek (47.179364, -122.497762); Leach Creek (47.209364, -122.512372); Ponce De Leon Creek (47.162148, -122.52888).

(vi) Port Ludlow Creek-Chimacum Creek 1711001908. Outlet(s) = Chimacum Creek (Lat 48.050532, Long -122.784429); Unnamed (47.917613, -122.703872); upstream to endpoint(s) in: Unnamed (47.918337, -122.709325); Unnamed (47.927687, -122.805588); Unnamed (47.947673, -122.850871); Unnamed (47.954906, -122.7614); Unnamed (47.986329, -122.80519).

(18) Dungeness-Elwha Subbasin 17110020—(i) Discovery Bay Watershed 1711002001. Outlet(s) = Contractors Creek (Lat 48.04559, Long -122.874989); Salmon Creek (47.989306, -



122.889155); Snow Creek (47.989848, -122.88472); upstream to endpoint(s) in: Andrews Creek (47.916408, -122.900812); Contractors Creek (48.041198, -122.879974); Salmon Creek (47.968169, -122.963869); Snow Creek (47.935356, -122.943211).

(ii) Sequim Bay Watershed 1711002002. Outlet(s) = Bell Creek (Lat 48.083191, Long -123.052803); Jimmycomelately Creek (48.023348, -123.005179); Johnson Creek (48.062731, -123.040899); Unnamed (48.028495, -122.996498); upstream to endpoint(s) in: Bell Creek (48.062921, -123.103118); Jimmycomelately Creek (47.991106, -123.012853); Johnson Creek (48.054282, -123.060541); Unnamed (47.98473, -123.004078); Unnamed (48.028602, -122.994476); Unnamed (48.077698, -123.085489).

(iii) Dungeness River Watershed 1711002003. Outlet(s) = Cassalery Creek (Lat 48.134645, Long -123.096671); Dungeness River (48.150413, -123.132404); Gierin Creek (48.115086, -123.060063); Unnamed (48.137866, -123.101098); Unnamed (48.153473, -123.12799); upstream to endpoint(s) in: Bear Creek (48.05479, -123.159906); Canyon Creek (48.022505, -123.141514); Cassalery Creek (48.105307, -123.121002); Dungeness River (47.938446, -123.089756); Gierin Creek (48.091597, -123.095521); Gold Creek (47.941297, -123.086086); Gray Wolf River (47.916035, -123.242895); Matriotti Creek (48.068168, -123.193047); Unnamed (48.065991, -123.17376); Unnamed (48.06625, -123.169857); Unnamed (48.068168, -123.193047); Unnamed (48.068308, -123.193024); Unnamed (48.090644, -123.191398); Unnamed (48.106277, -123.076132); Unnamed (48.107219, -123.187879); Unnamed (48.112875, -123.160292); Unnamed (48.116253, -123.157937); Unnamed (48.116481, -123.141572); Unnamed (48.118304, -123.078321); Unnamed (48.124002, -123.143503); Unnamed (48.127704, -123.111613); Unnamed (48.12912, -123.148566); Unnamed (48.130335, -123.127456).

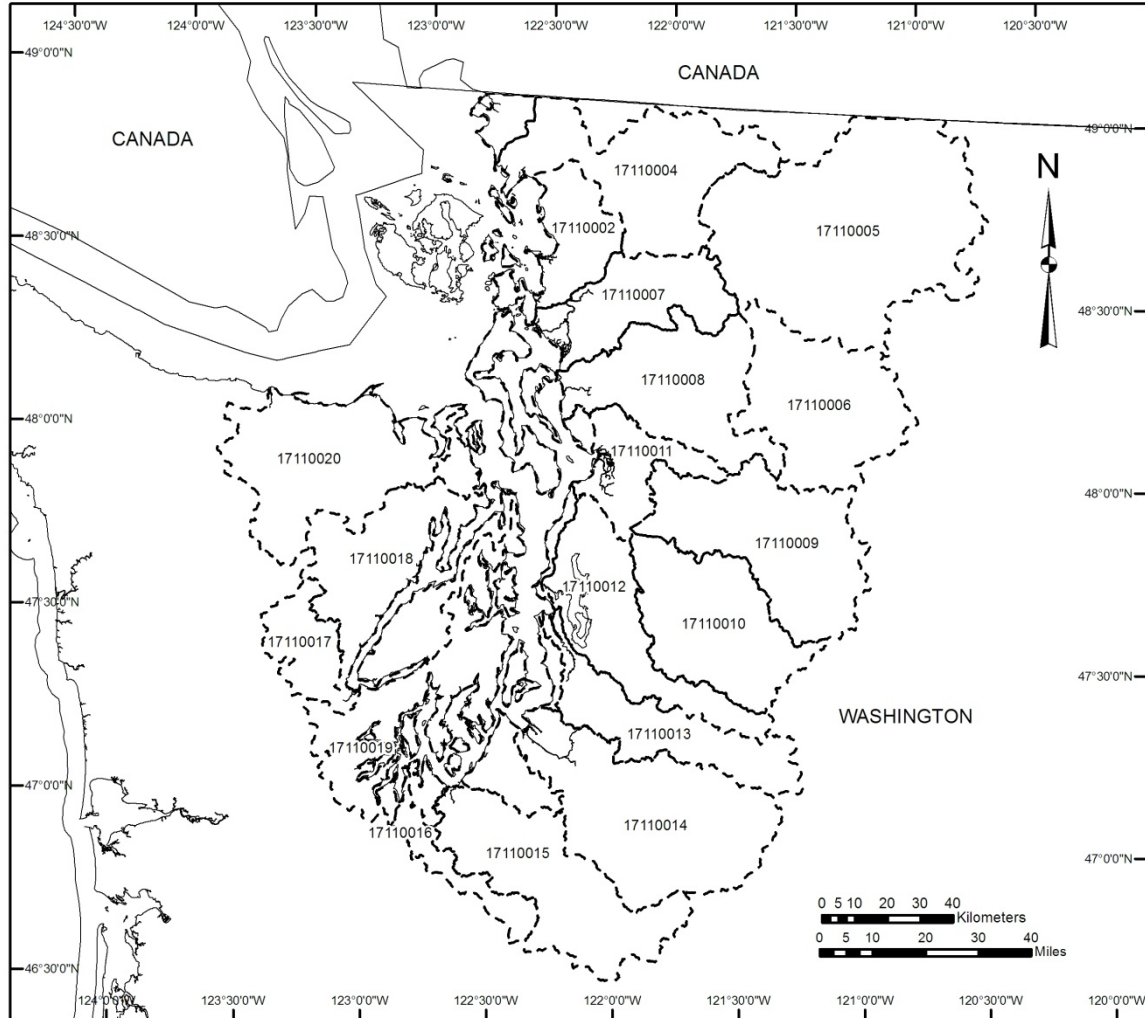
(iv) Port Angeles Harbor Watershed 1711002004. Outlet(s) = Bagley Creek (Lat 48.114035, Long -123.340599); Dry Creek (48.134316, -123.520821); Ennis Creek (48.117472, -

123.405373); Lees Creek (48.114686, -123.388339); McDonald Creek (48.125382, -123.220649); Morse Creek (48.117713, -123.351674); Siebert Creek (48.120481, -123.289579); Tumwater Creek (48.124386, -123.445396); Valley Creek (48.122912, -123.437893); upstream to endpoint(s) in: Bagley Creek (48.057013, -123.319844); Dry Creek (48.123255, -123.520058); East Fork Lees Creek (48.075209, -123.37549); East Fork Siebert Creek (48.02011, -123.287767); Ennis Creek (48.052991, -123.411534); Lees Creek (48.078066, -123.394993); McDonald Creek (48.017887, -123.232576); Morse Creek (48.061048, -123.349345); Pederson Creek (48.026991, -123.253803); Tumwater Creek (48.092665, -123.4702); Unnamed (48.0143, -123.260326); Unnamed (48.030295, -123.301668); Valley Creek (48.106808, -123.451781); West Fork Siebert Creek (48.000634, -123.304205).



(v) Elwha River Watershed 1711002007. Outlet(s) = Elwha River (Lat 48.146456, Long -123.568438); upstream to endpoint(s) in: Elwha River (47.739706, -123.494829); Unnamed (48.13353, -123.557816); Unnamed (48.143336, -123.555008); Indian Creek (48.07806, -123.725186); Little River (48.05994, -123.520805).

(19) Maps of critical habitat for the Puget Sound steelhead DPS follow:

## Map of the Puget Sound Steelhead DPS



### Legend

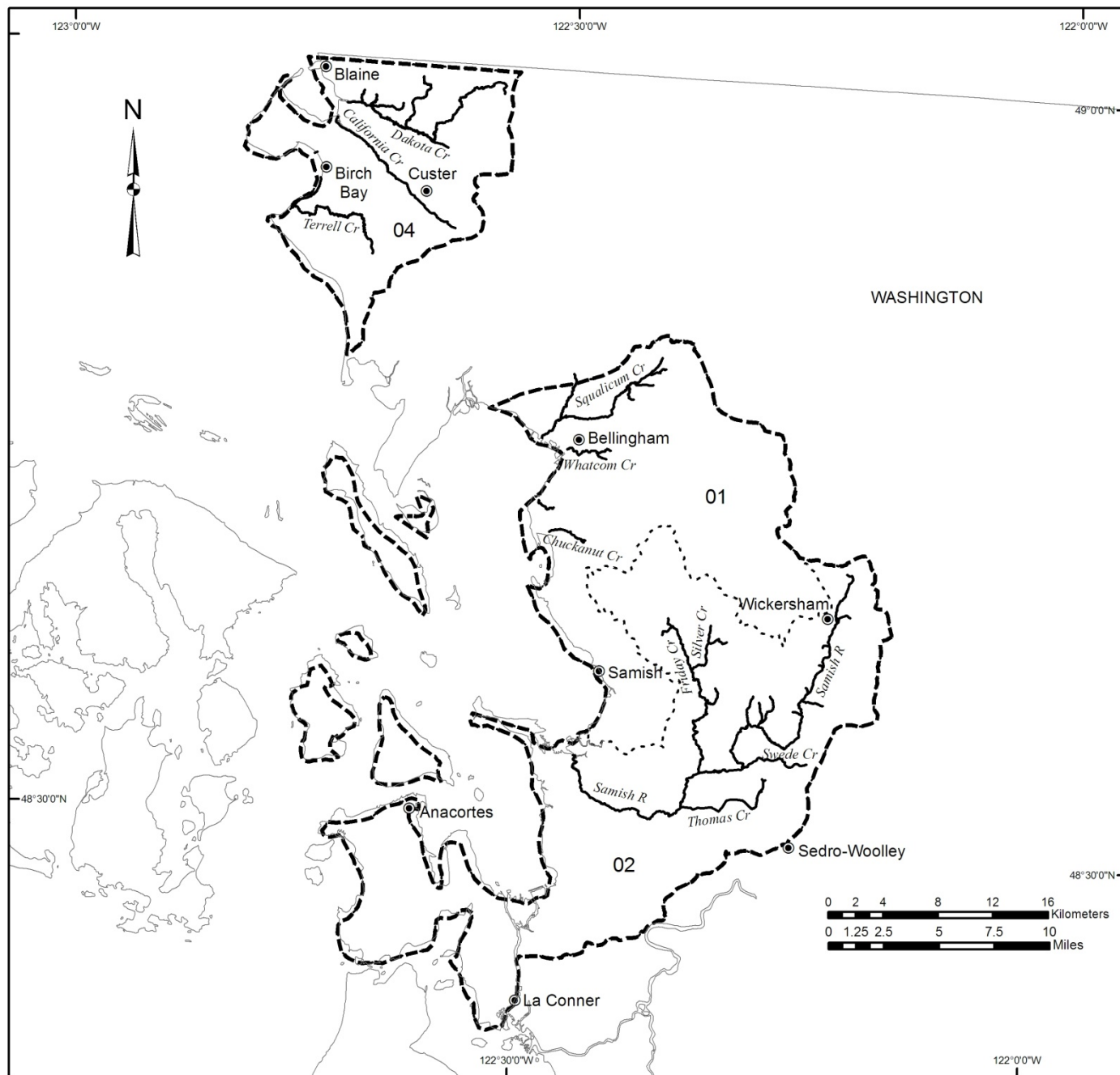
-  State Boundaries
-  Subbasin Boundary

### Area of Detail



# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Strait Of Georgia Subbasin  
17110002



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 04 = Watershed code - last 2 digits of 17110002xx

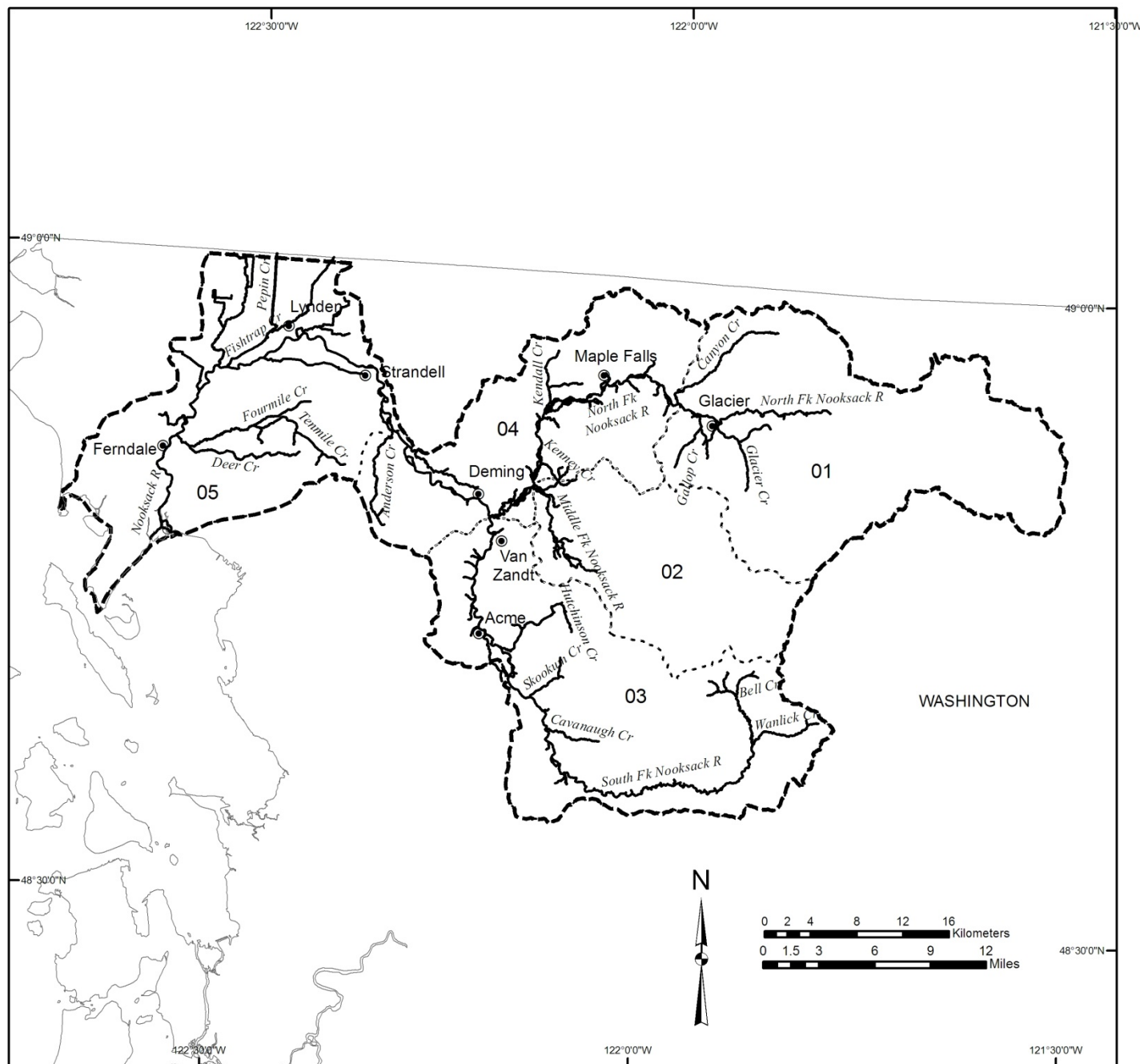
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Nooksack Subbasin  
17110004



## Legend

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 05 = Watershed code - last 2 digits of 17110004xx

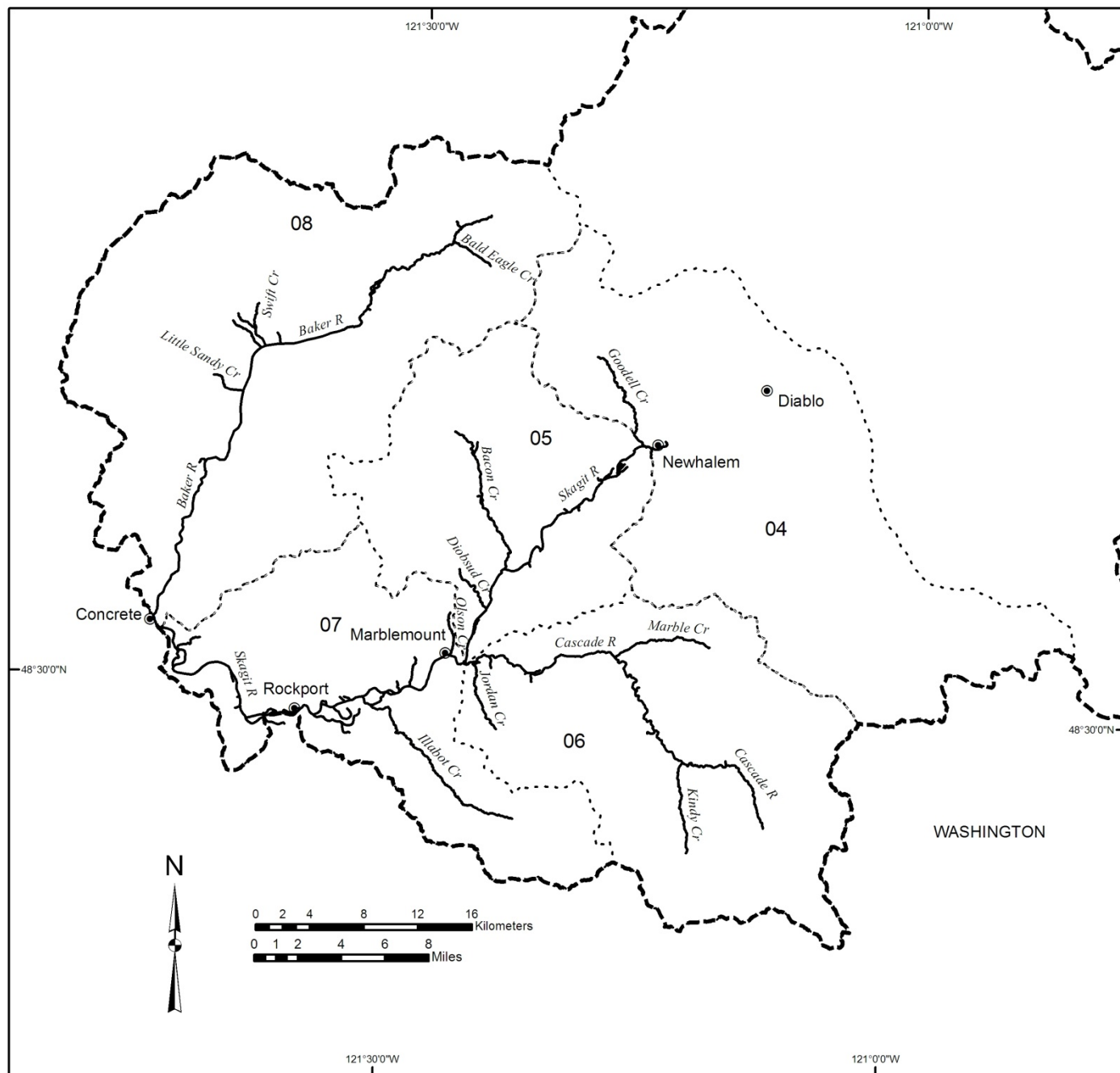
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Upper Skagit Subbasin  
17110005



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

04 - 08 = Watershed code - last 2 digits of 17110005xx

## Area of Detail

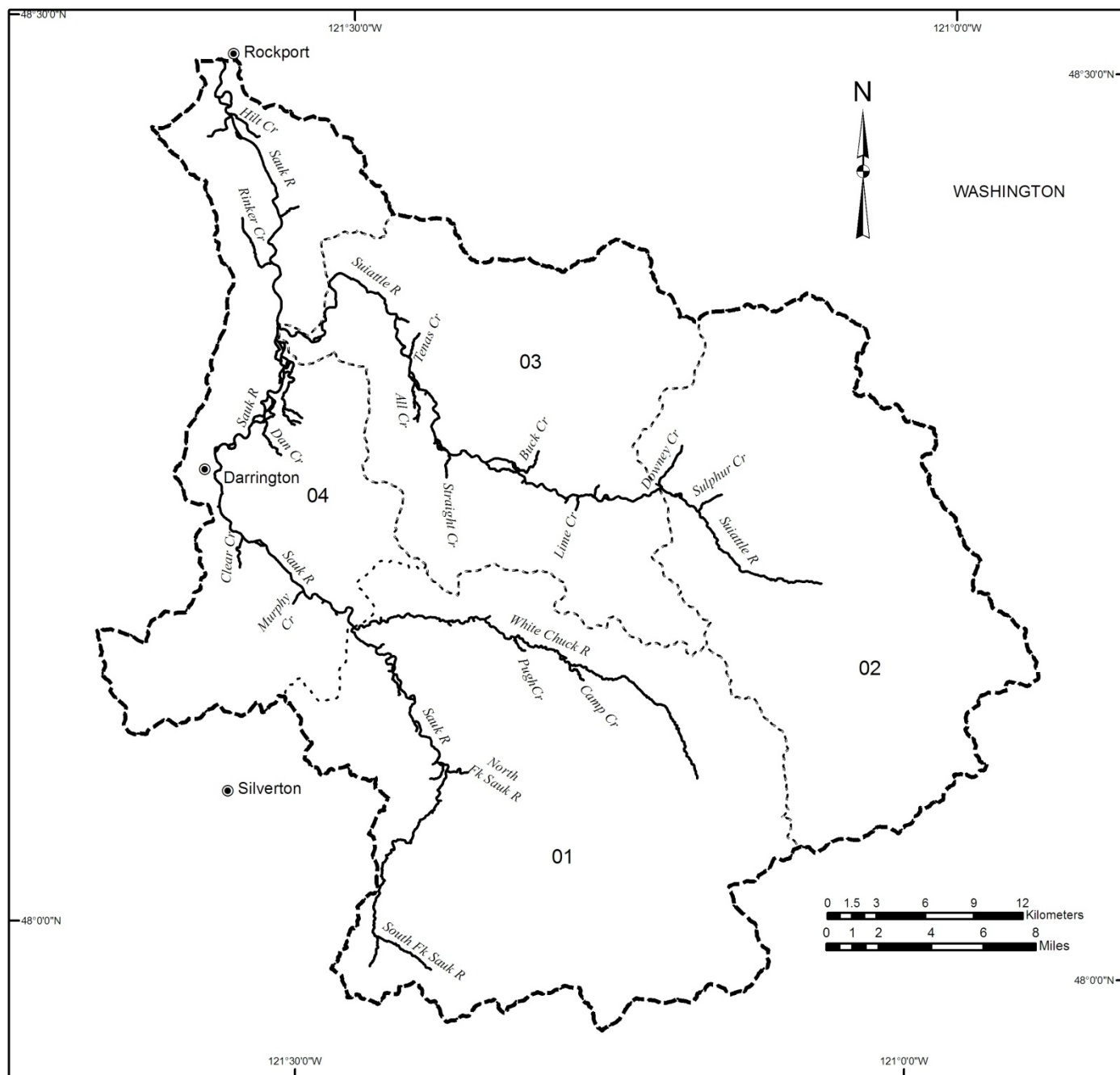


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.



# Proposed Critical Habitat for the Puget Sound Steelhead DPS

**Sauk Subbasin  
17110006**



## Legend

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

01 - 04 = Watershed code - last 2 digits of 17110006xx

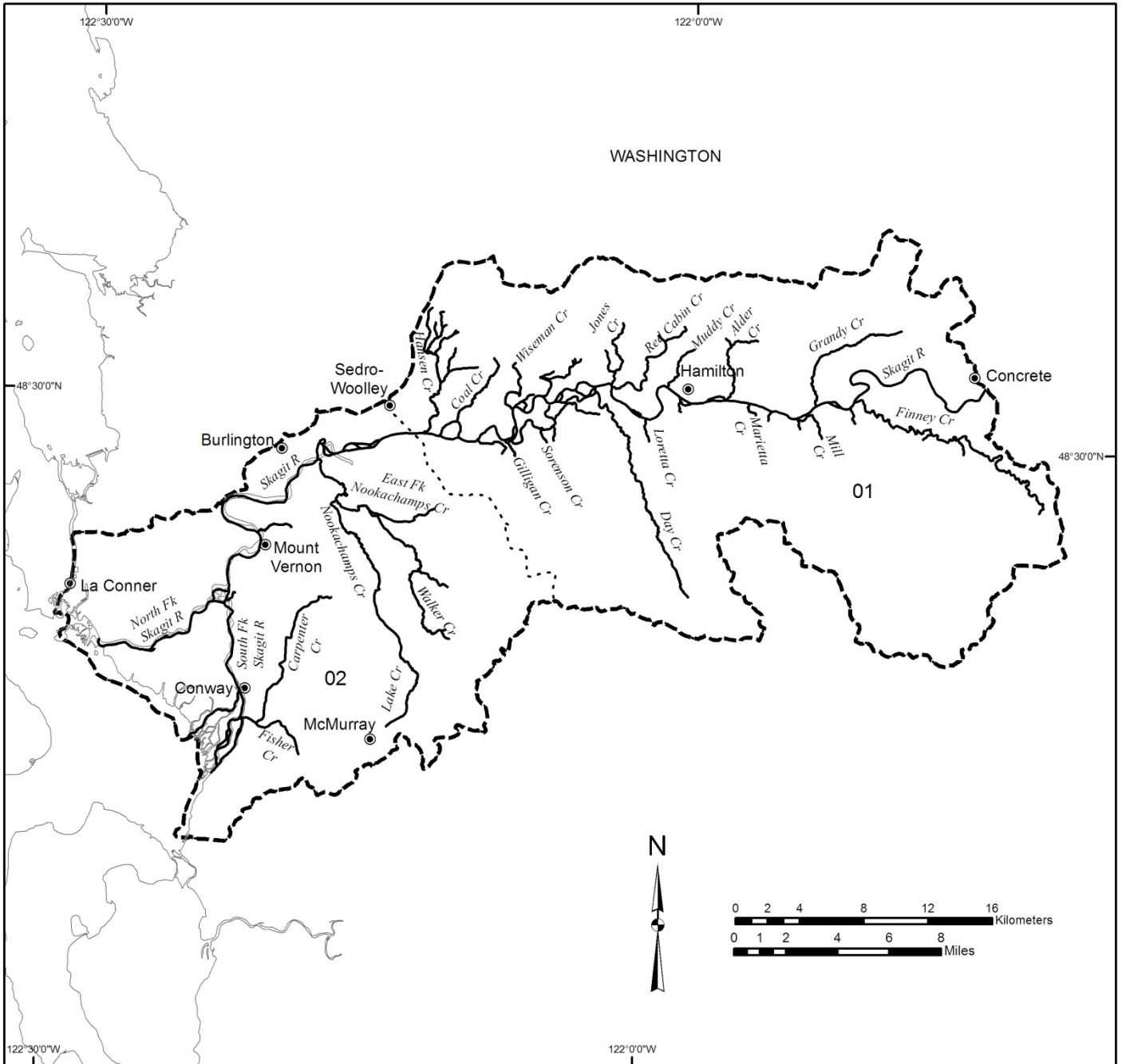
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Lower Skagit Subbasin  
17110007



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 02 = Watershed code - last 2 digits of 17110007xx

## Area of Detail

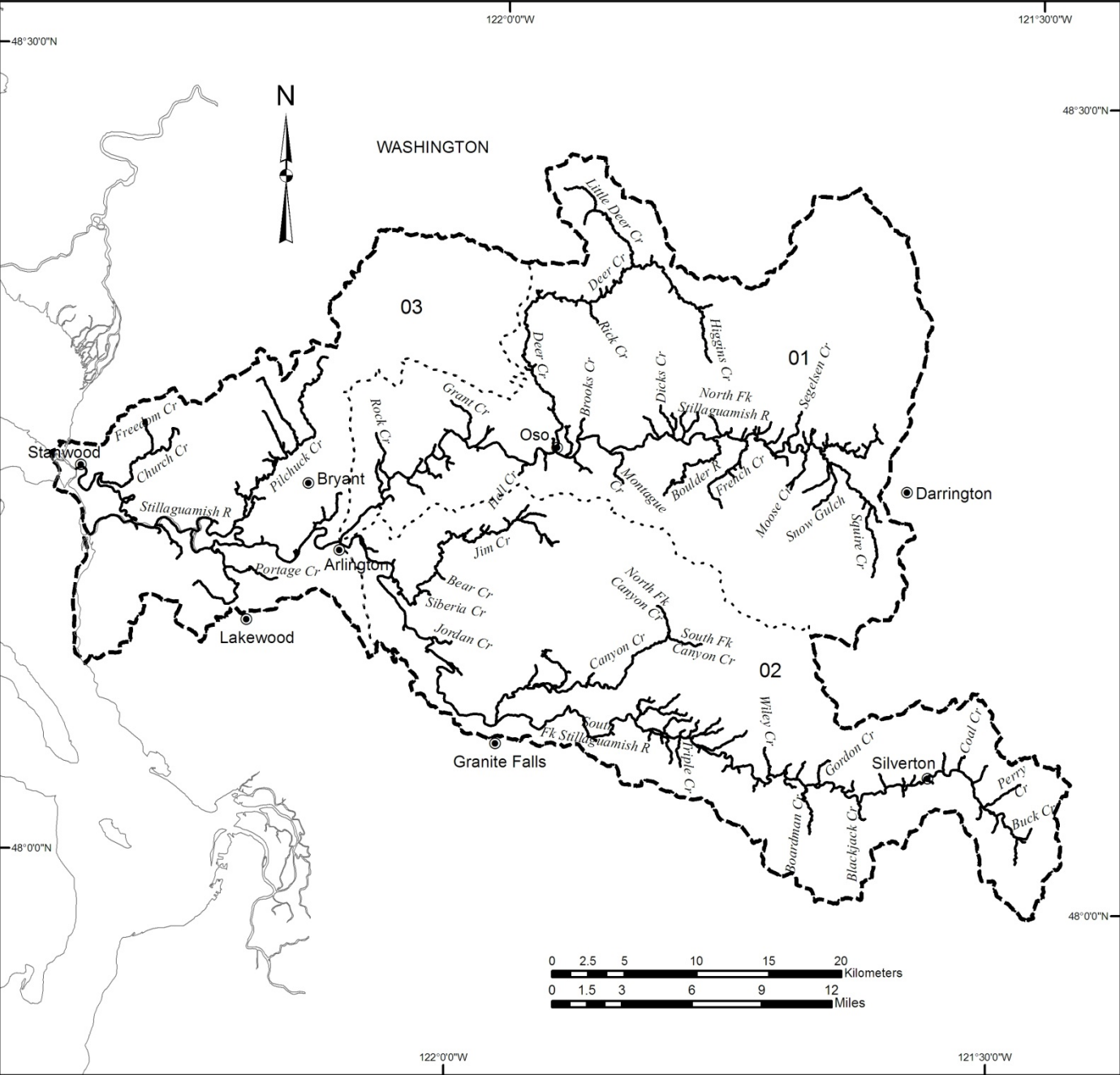


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.



Proposed Critical Habitat for the  
Puget Sound Steelhead DPS

Stillaguamish Subbasin  
17110008



**Legend**

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ..... Watershed Boundaries

01 - 03 = Watershed code - last 2 digits of 17110008xx

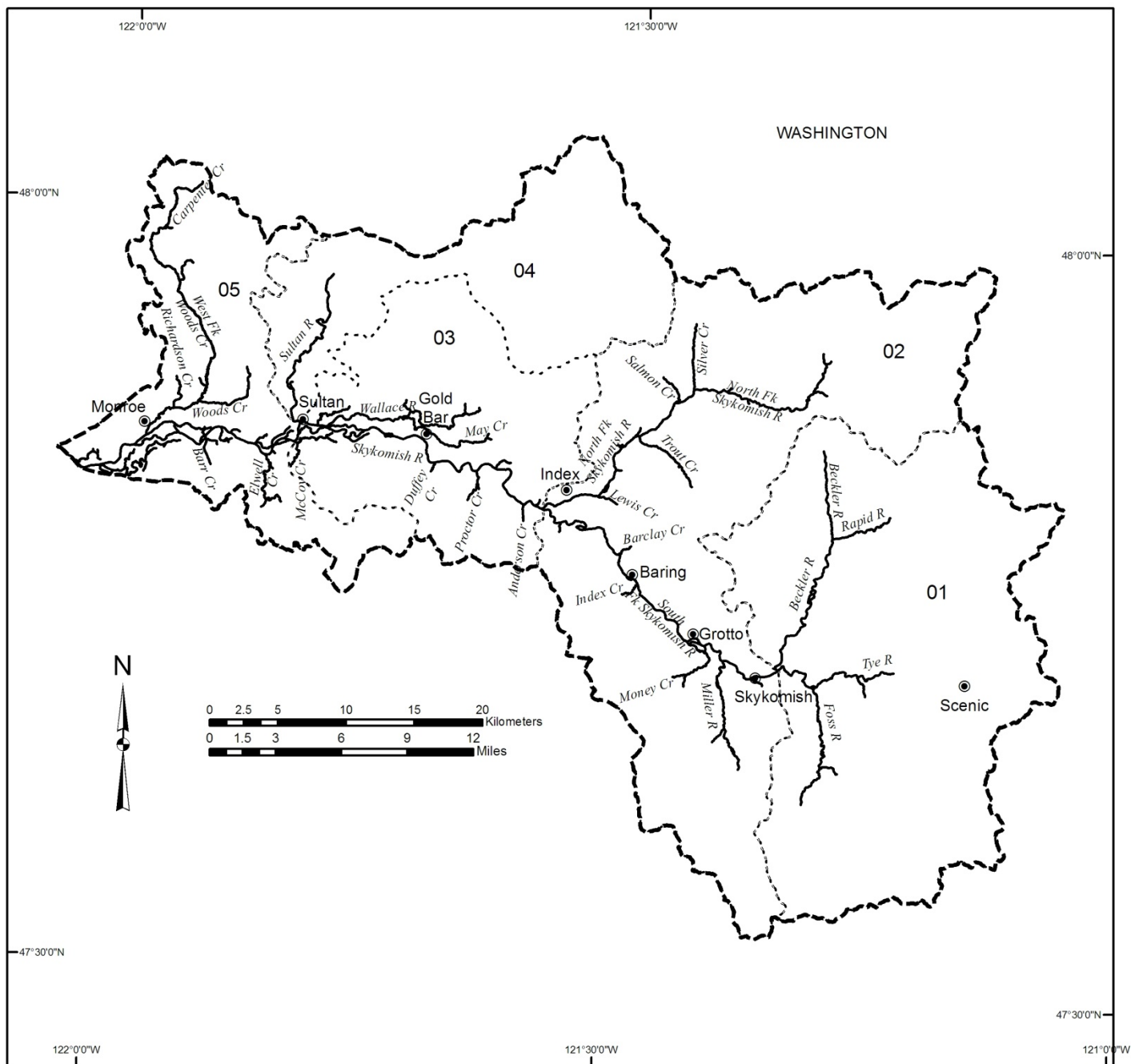
**Area of Detail**



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Skykomish Subbasin  
17110009



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

01 - 05 = Watershed code - last 2 digits of 17110009xx

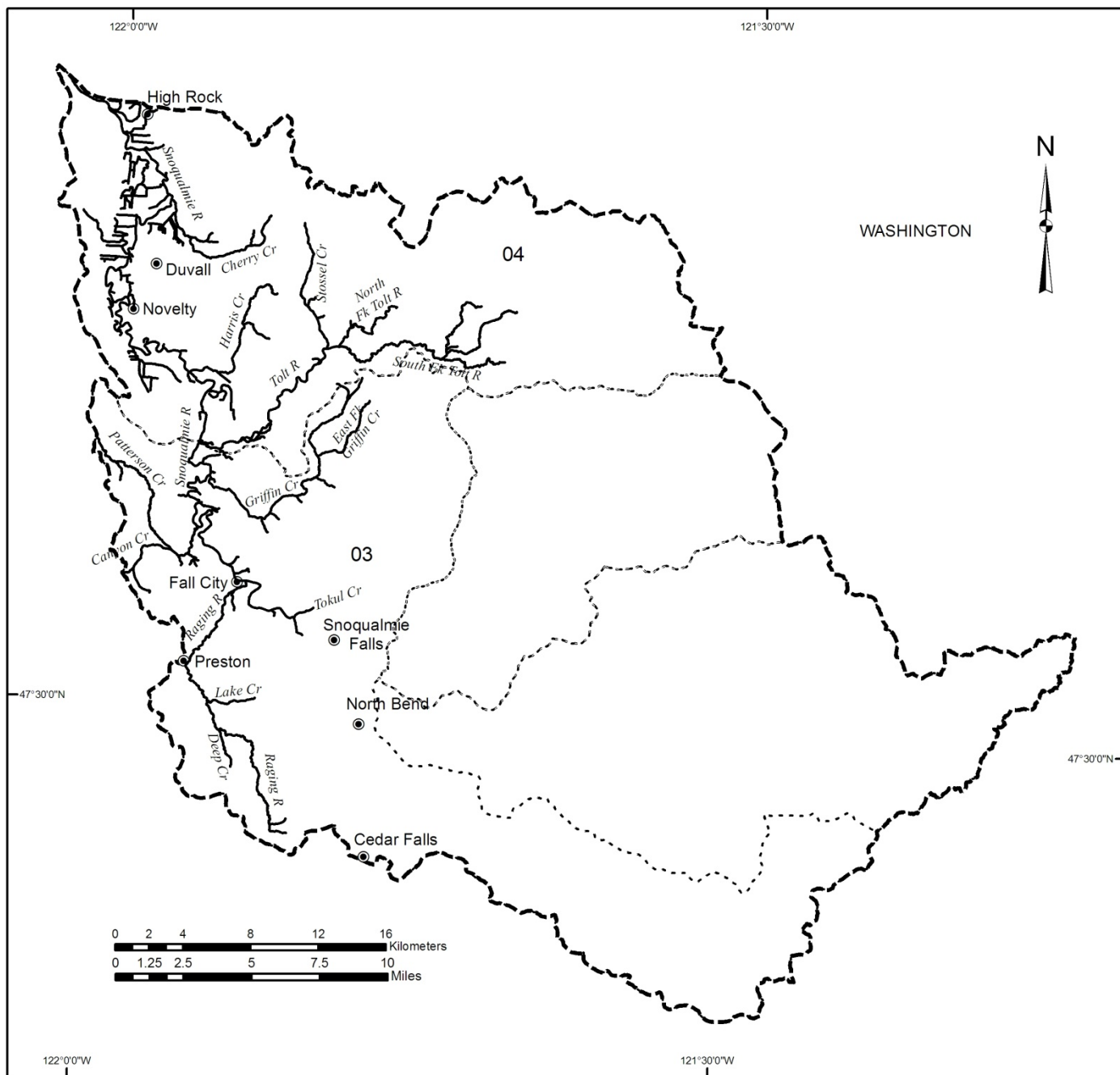
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Snoqualmie Subbasin  
17110010



## Legend

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

03 - 04 = Watershed code - last 2 digits of 17110010xx

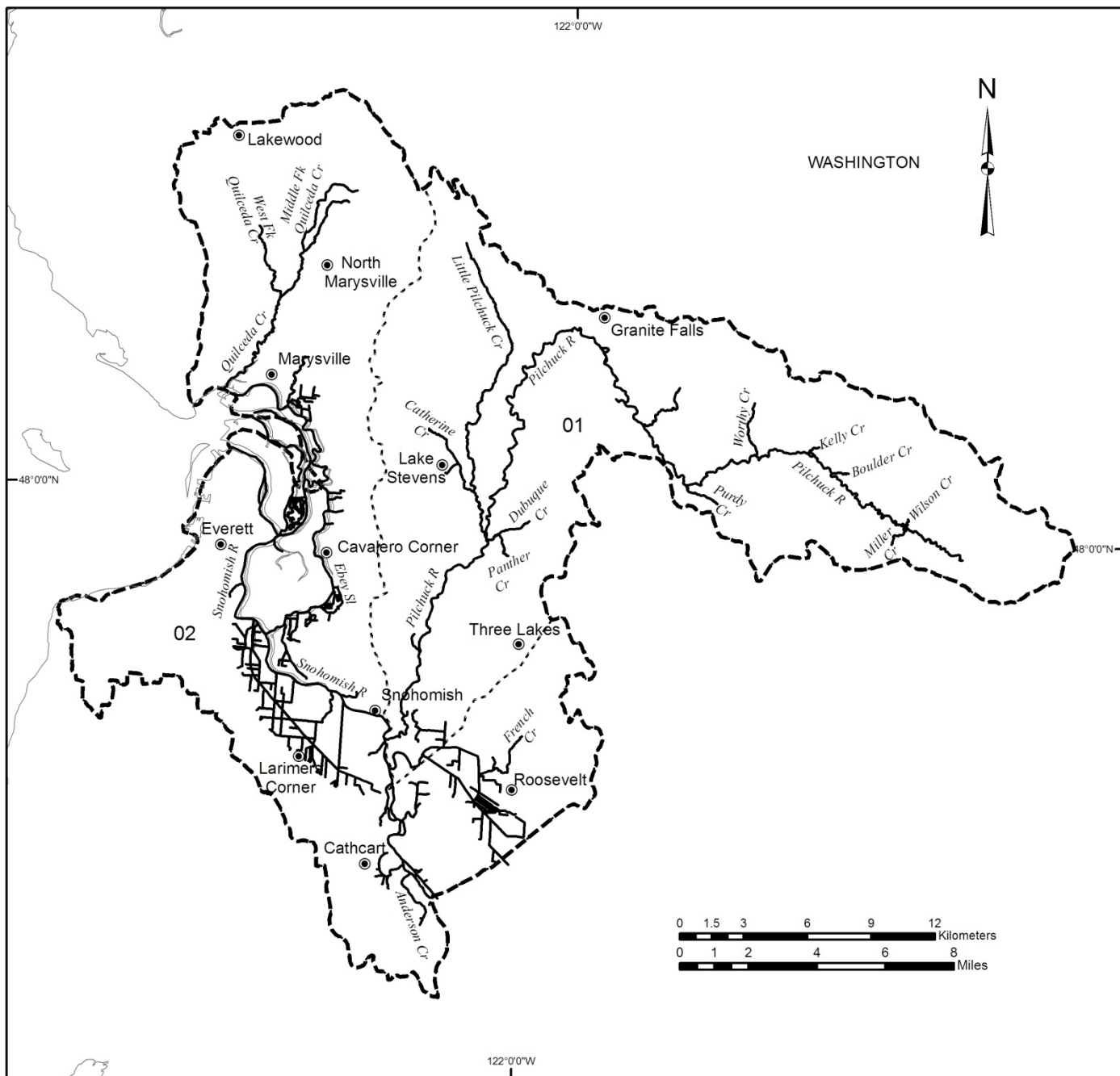
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Snohomish Subbasin  
17110011



## Legend

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 02 = Watershed code - last 2 digits of 17110011xx

## Area of Detail

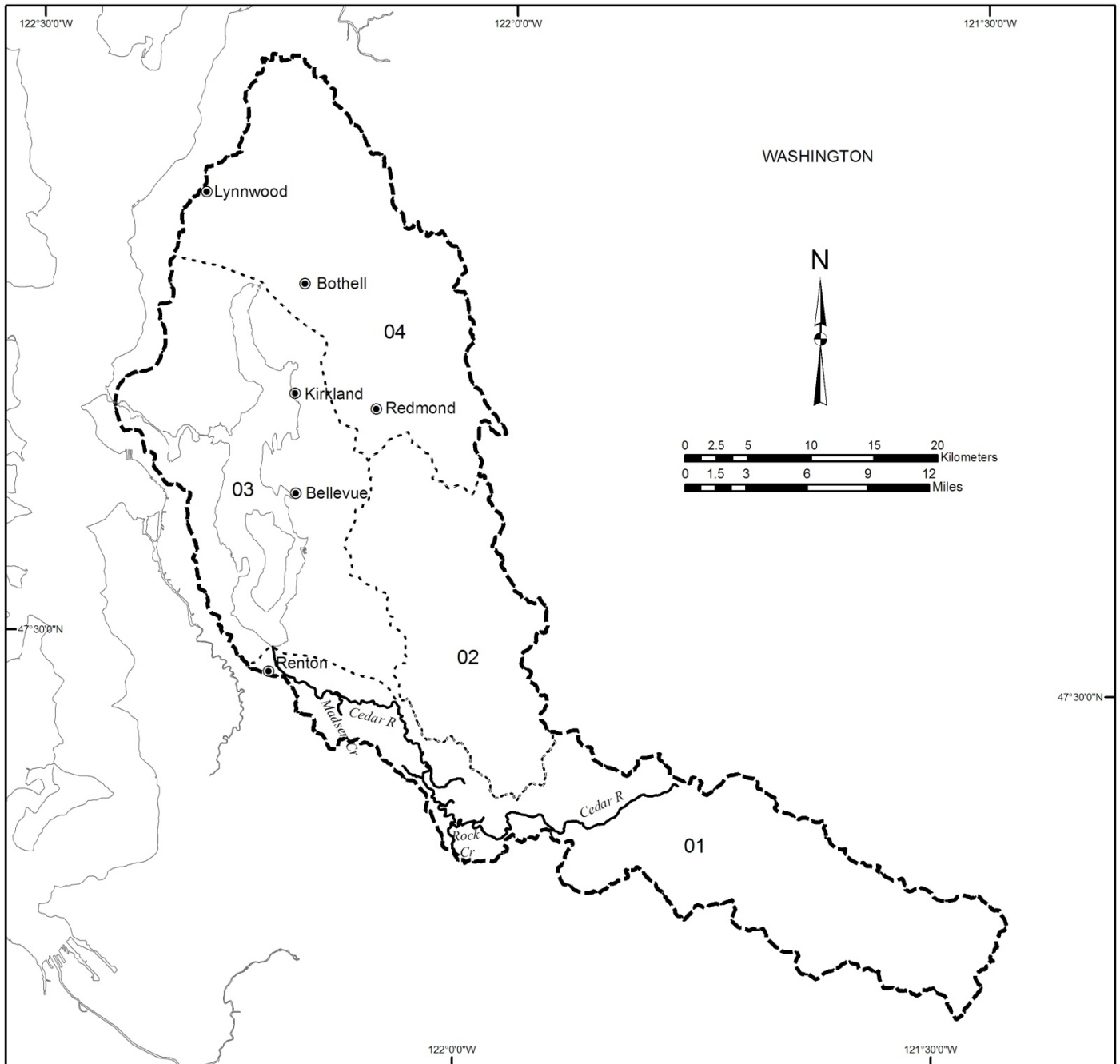


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.



# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Lake Washington Subbasin  
17110012



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 04 = Watershed code - last 2 digits of 17110012xx

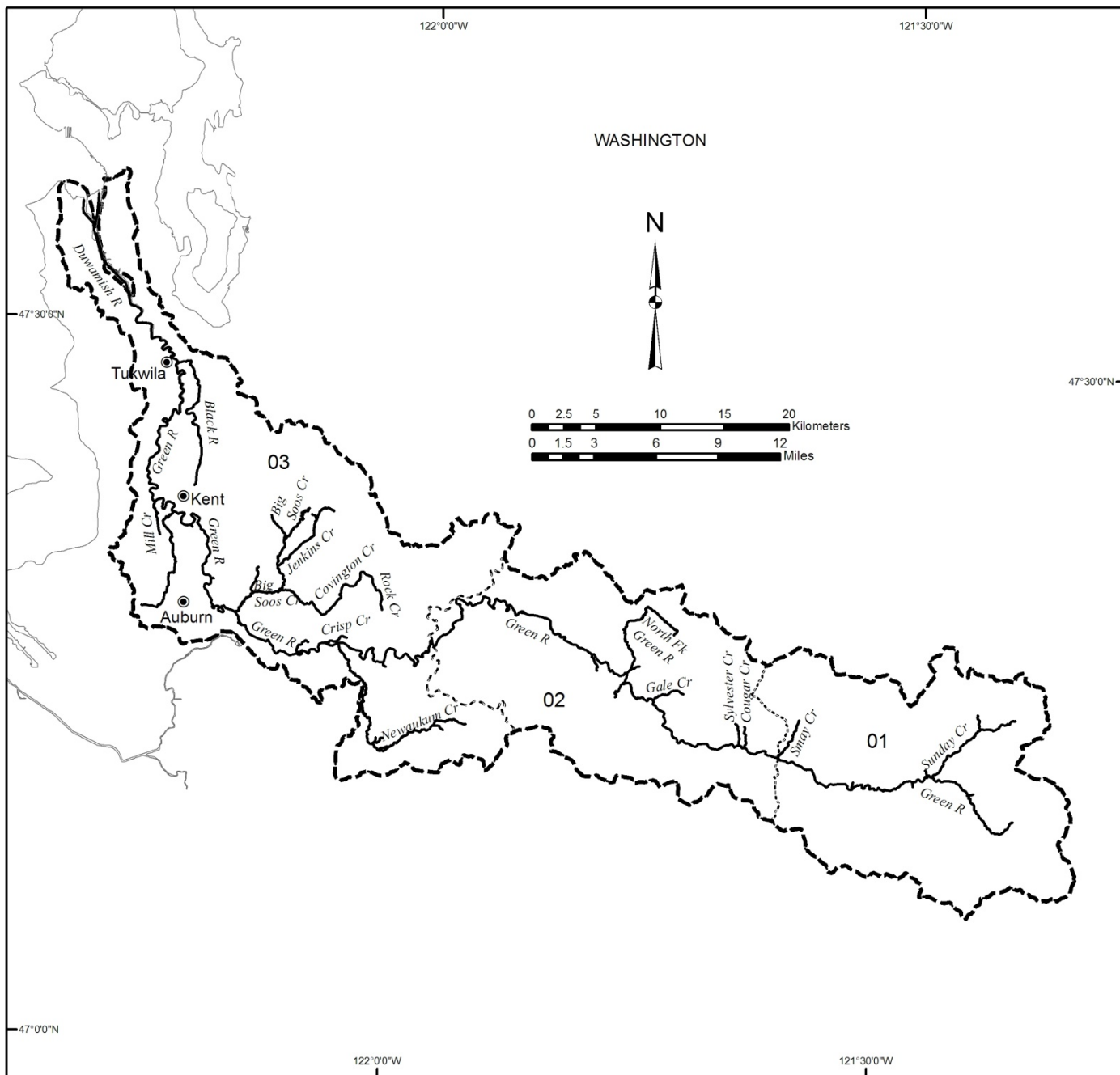
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

**Duwamish Subbasin  
17110013**



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ⋯ Watershed Boundaries

01 - 03 = Watershed code - last 2 digits of 17110013xx

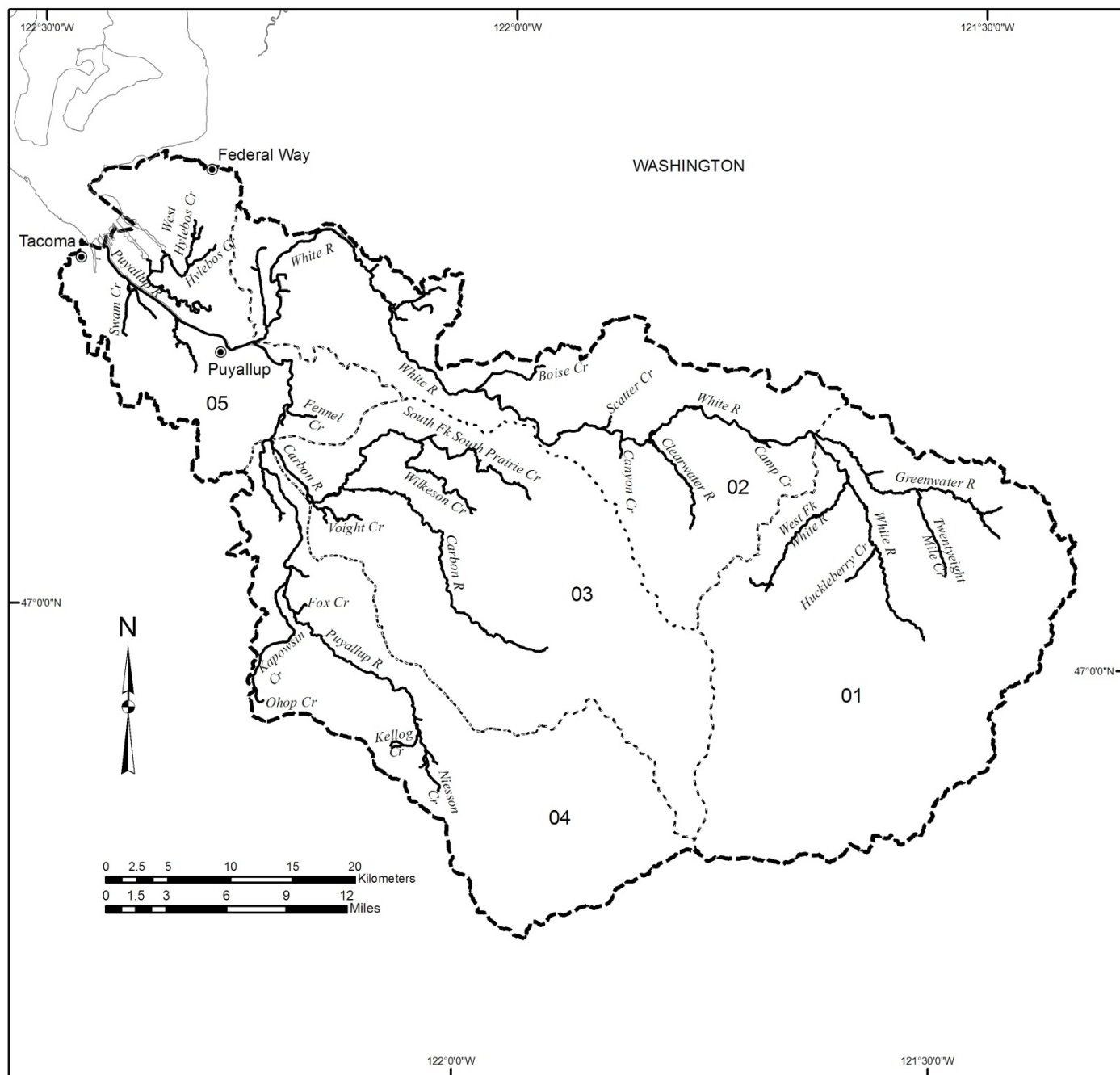
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Puyallup Subbasin  
17110014



## Legend

- Cities / Towns
- Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

01 - 05 = Watershed code - last 2 digits of 17110014xx

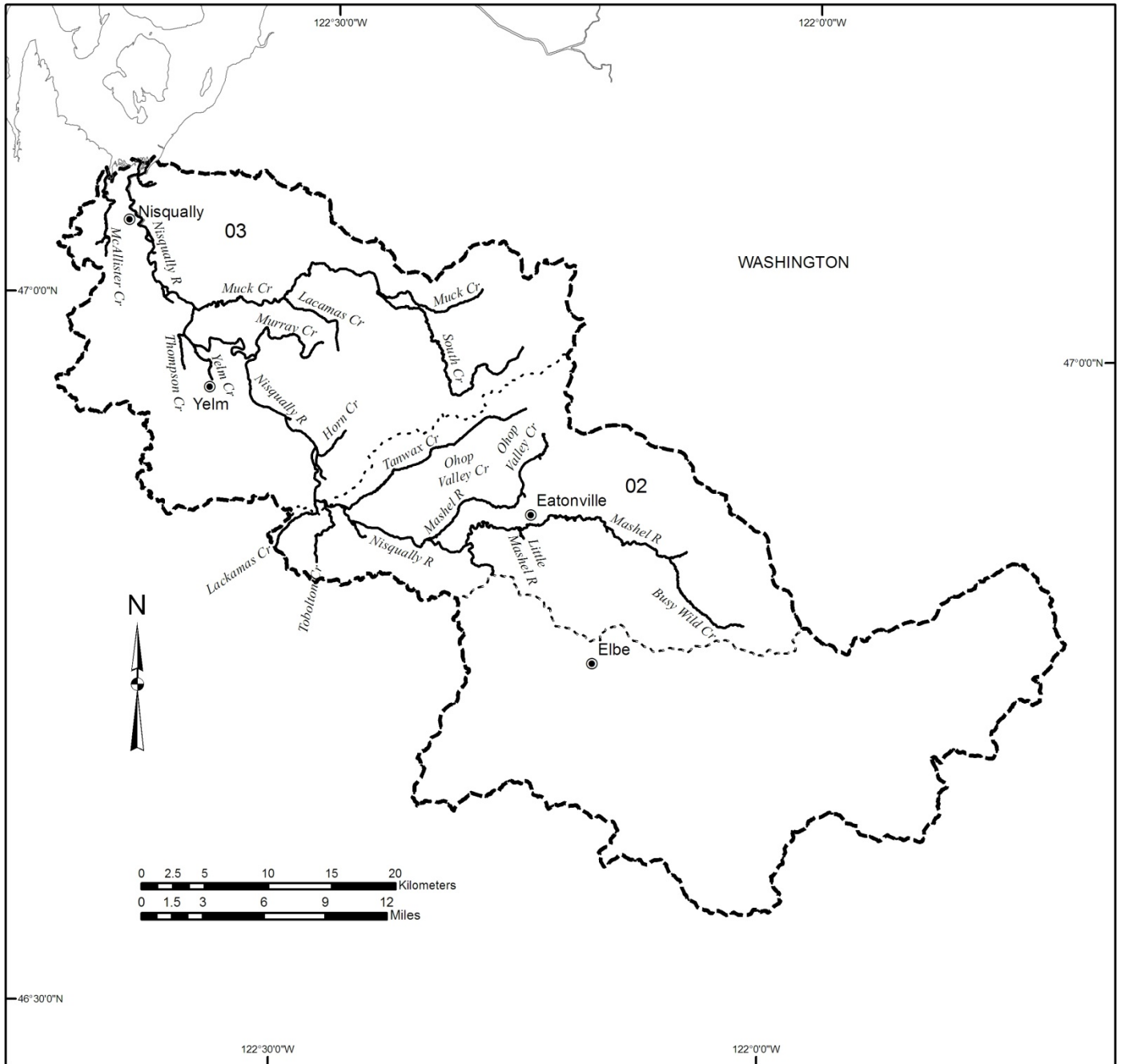
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Nisqually Subbasin  
17110015



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

02 - 03 = Watershed code - last 2 digits of 17110015xx

## Area of Detail

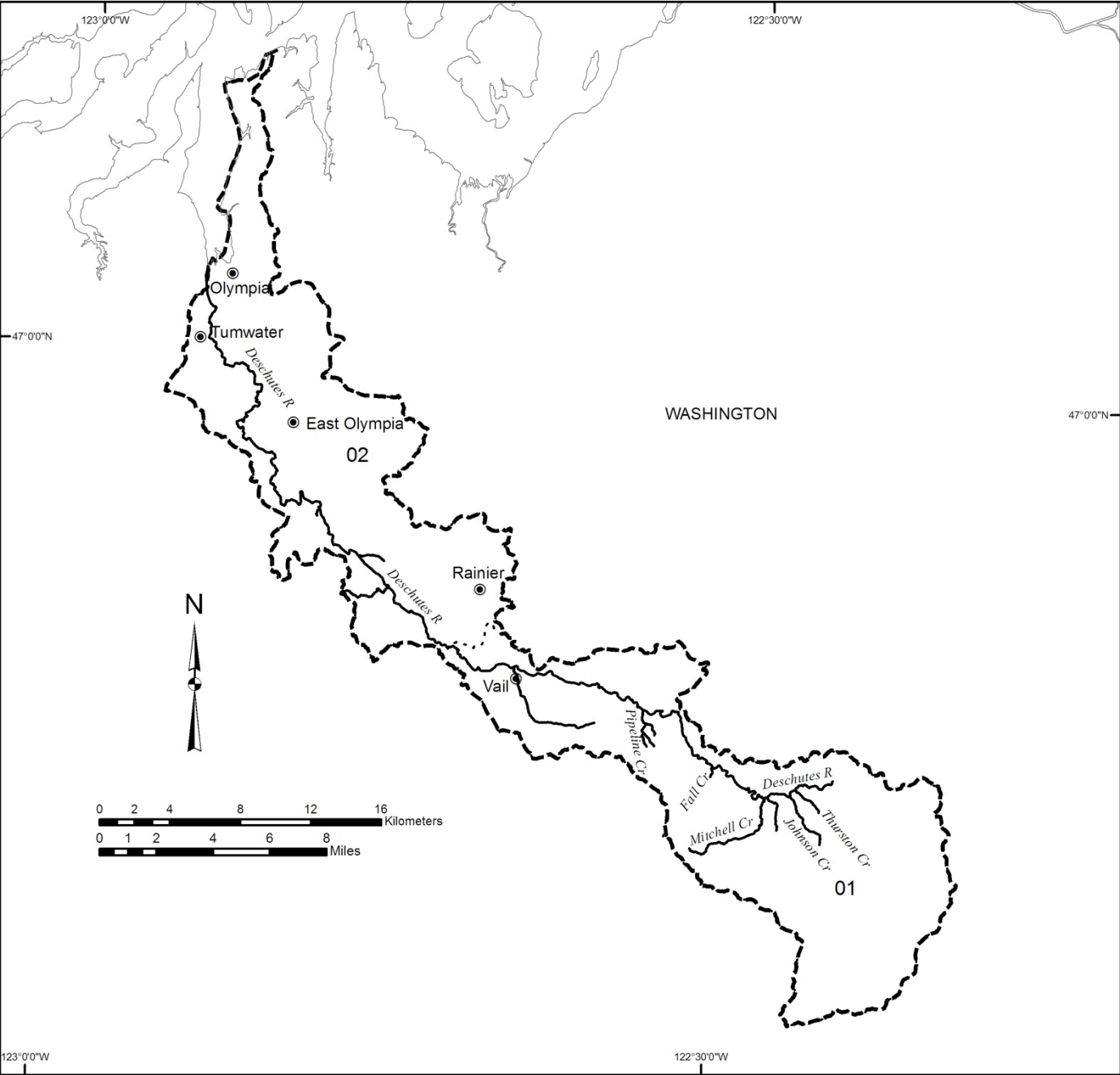


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.



**Proposed Critical Habitat for the  
Puget Sound Steelhead DPS**

**Deschutes Subbasin  
17110016**



**Legend**

- Cities / Towns
- Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 - 02 = Watershed code - last 2 digits of 17110016xx

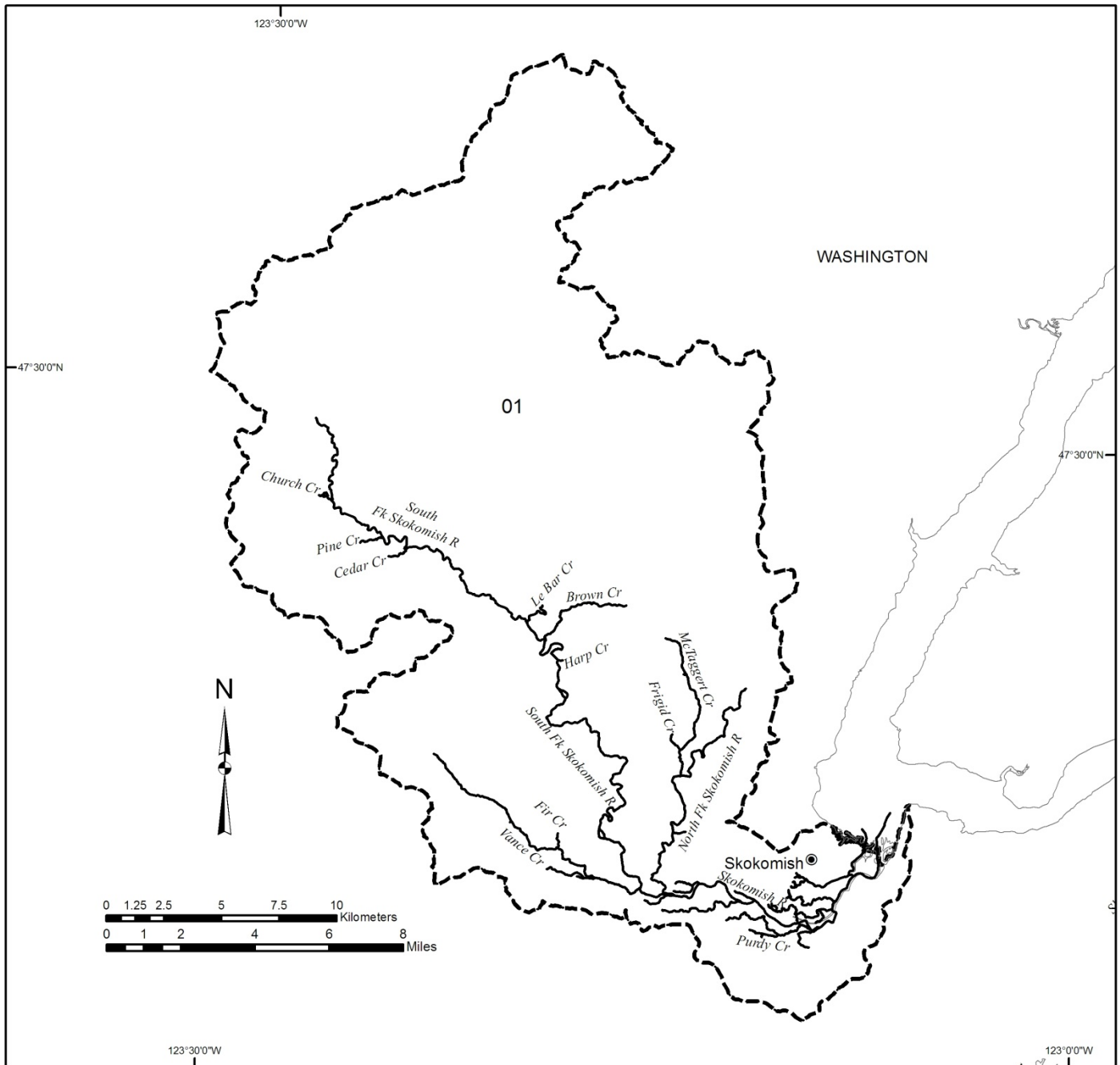
**Area of Detail**



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

Skokomish Subbasin  
17110017



## Legend

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

01 = Watershed code - last 2 digits of 17110017xx

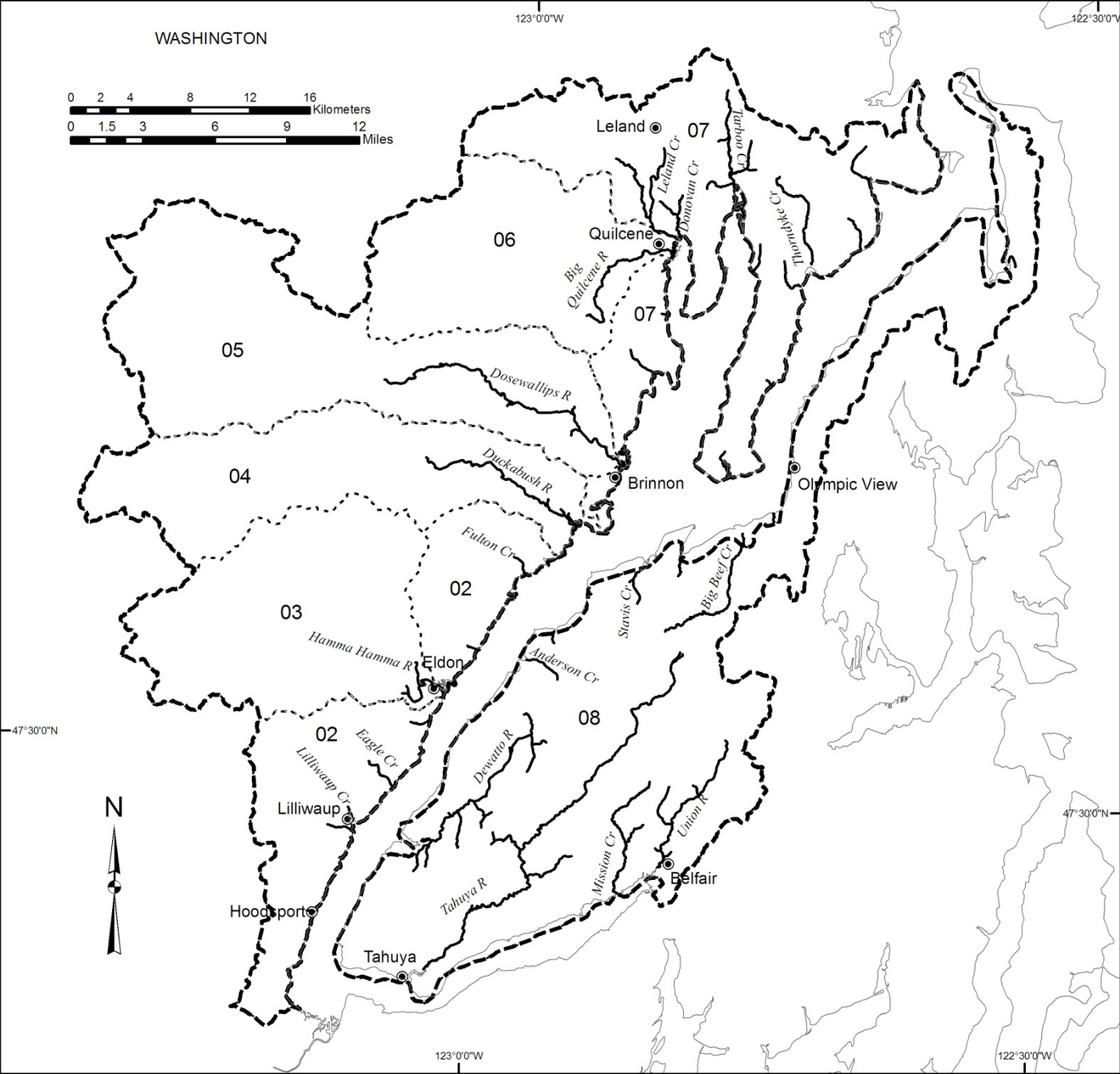
## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

**Proposed Critical Habitat for the  
Puget Sound Steelhead DPS**

**Hood Canal Subbasin  
17110018**



**Legend**

- Cities / Towns
- ~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- ... Watershed Boundaries

02 - 08 = Watershed code - last 2 digits of 17110018xx

**Area of Detail**

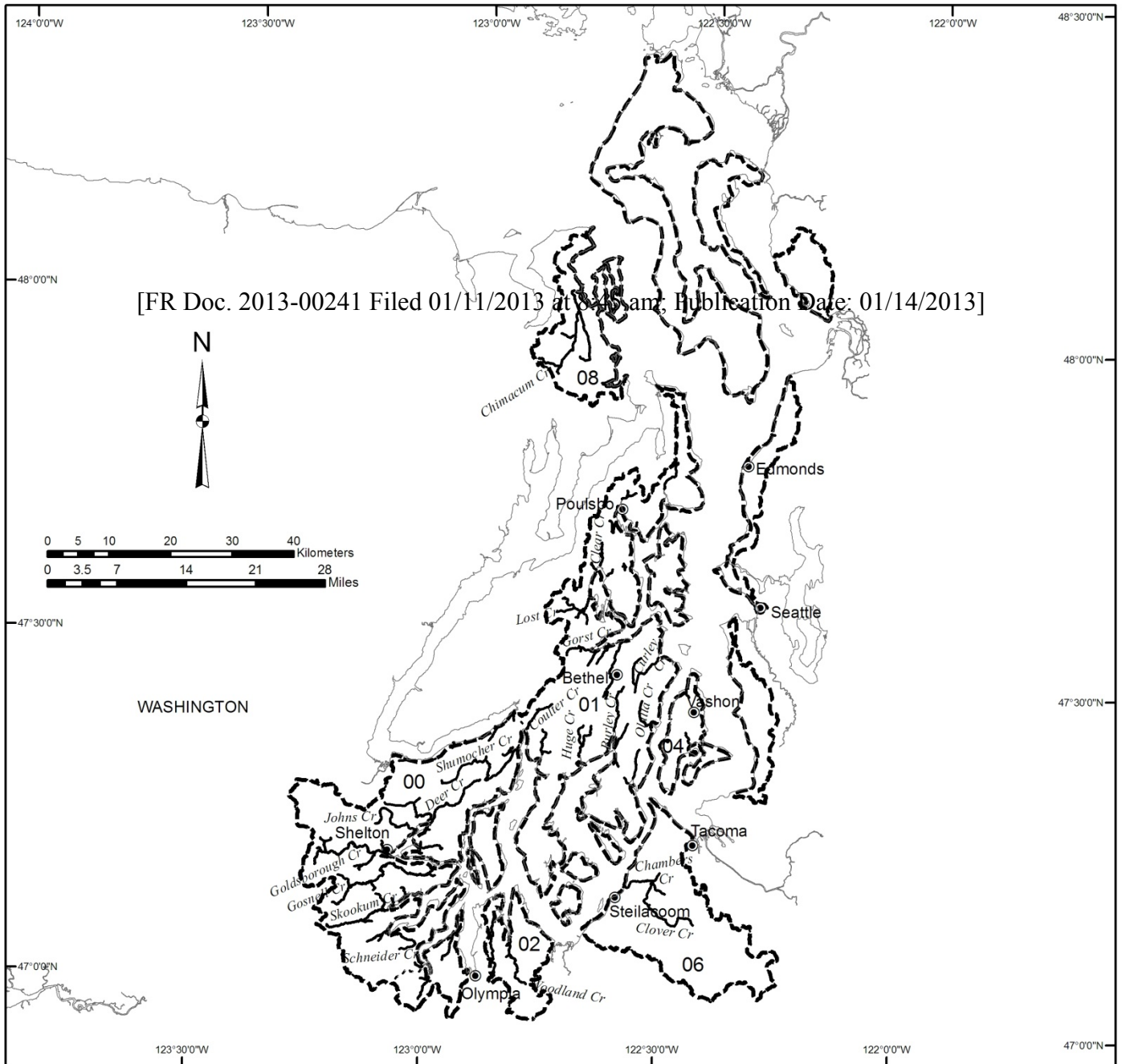


This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.

# Proposed Critical Habitat for the Puget Sound Steelhead DPS

**Puget Sound Subbasin  
17110019**

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## Legend

- Cities / Towns
- ~~~~ Critical Habitat
- State Boundary
- - - Subbasin Boundary
- - - Watershed Boundaries

00 - 08 = Watershed code - last 2 digits of 17110019xx

## Area of Detail



This map does not show U.S. Department of Defense sites determined to be ineligible for designation nor excluded areas associated with Indian lands and Habitat Conservation Plans; see the regulatory text for a description of these excluded areas.